

MILITARY COMMUNICATIONS – ELECTRONICS BOARD

MCEB



FREQUENCY RESOURCE RECORD SYSTEM (FRRS)

STANDARD FREQUENCY ACTION FORMAT (SFAF)



MCEB PUB 7
31 DECEMBER 2003

FREQUENCY RESOURCE RECORD SYSTEM
STANDARD FREQUENCY ACTION FORMAT

FORWARD

Purpose: This document establishes the Frequency Resource Record System (FRRS) Standard Frequency Action Format (SFAF).

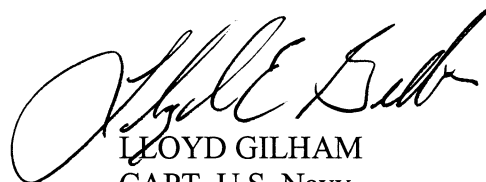
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Amendments and Review: This document will be reviewed in its entirety every five years and amendments will be issued by the MCEB when appropriate. This document supersedes MCEB PUB 7 dated 1 October 1998 with change 1 dated 1 December 1999, change 2 dated 30 November 2000, change 3 dated 30 November 2001 and change 4 dated 31 December 2002. Suggested changes to MCEB Pub 7 can be forwarded to:

MILITARY COMMUNICATIONS ELECTRONICS BOARD

Attn: Military Secretary
The Pentagon, Room 1E833
Washington, DC 20318-6100

FOR THE CHAIRMAN:



LLOYD GILHAM
CAPT, U.S. Navy
Military Secretary

Distribution: See Appendix C

RECORD OF CHANGES AND CORRECTIONS

[illegible]

TABLE OF CONTENTS

PARAGRAPH	PAGE
FORWARD.....	i
RECORD OF CHANGES AND CORRECTIONS	ii
TABLE OF CONTENTS.....	iii
1. GENERAL.....	1
a. Purpose.....	1
b. Appendixes	1
c. Definitions.....	1
2. FORMAT.....	2
a. Message Format	2
b. Automated Processing Formatted Files	3
3. PROCEDURES.....	3
a. Prohibited Data Entries	4
b. Restricted Data Entries	4
c. Data Item Occurrence Identifiers.....	4
d. Receiver Location Identifiers.....	4
e. Data Item Purge Identifier.....	5
f. Types of Actions.....	5
4. GENERAL RULES REGARDING TRANSACTION SECURITY CLASSIFICATION AND THE PROCESSING OF SECRET FREQUENCY ASSIGNMENT TRANSACTION DATA TO NTIA.....	10
a. Transaction Security Classification	11
b. Processing SECRET Frequency Assignment Transactions to NTIA	15
c. Processing UNCLASSIFIED records that when aggregated together are classified CONFIDENTIAL	16
5. PROCESSING TOP SECRET (T*S) DATA	16
a. General.....	16
b. Software Changes to Accommodate T*S Processing.....	17
6. SFAF DATA ITEMS USED IN THE SPECTRUM XXI ANALYSIS MODELS	17
a. Interference Power-Level Model	17
b. Spectral Overlap Model	19
APPENDIXES	
A GUIDE TO THE SFAF DATA ITEMS	A-1
Annex A - List of Station Classes with Definitions.....	A-A-1
Annex B - Table of Emission Designators	A-B-1

Annex C - Geographical Abbreviations.....	A-C-1
Annex D - Manufacturer Codes.....	A-D-1
Annex E - JSC Minor Area Codes.....	A-E-1
Annex F – IRAC-Approved Record Notes	A-F-1
Annex G - List of DoD-Approved System Identifiers (Deleted).....	A-G-1
Annex H – Standard Status Codes Used for Status Tracking.....	A-H-1
Annex I – List of DoD Agency Specific Function Identifiers	A-I-1
 B ACRONYMS	 B-1
C DISTRIBUTION.....	C-1
D SUMMARY OF MAJOR CHANGES	D-1

STANDARD FORMATS FOR RADIO FREQUENCY PROPOSALS, ASSIGNMENTS, MODIFICATIONS, RENEWALS, REVIEWS, AND DELETIONS

1. GENERAL

a. **Purpose.** This document describes the Standard Frequency Action Format (SFAF) used for Department of Defense (DoD) radio frequency proposals, assignments, modifications, renewals, reviews, and deletions. Frequency assignment proposals for space or earth stations may be made in either the International Telecommunication Union (ITU) Appendix 3 format or the SFAF.

b. **Appendixes.** Appendix A contains a list of SFAF data items with their input requirements. Appendix B contains a list of acronyms used throughout the document. Appendix C contains the document Distribution List. Appendix D contains a summary of major changes from the previous MCEB PUB 7 dated 1 December 1998 as amended by Change 1 dated 1 December 1999.

c. **Definitions.** The following definitions apply to terms used in processing SFAF data into the Frequency Resource Record System's (FRRS) central database.

(1) **Frequency Assignment.** A frequency assignment is an authorization to operate, within prescribed parameters, electronic equipment that emit radio frequency (RF) energy. The authorization contains the assignment's technical parameters and administrative information.

(2) **Frequency Assignment Record.** A frequency assignment record is a grouping of data entries pertaining to an authorized frequency assignment stored within a database.

(3) **Frequency Assignment Transaction.** A frequency assignment transaction (also called a proposal) is a formatted grouping of data entries used to request a new assignment, an update, or a deletion of a frequency assignment. A transaction always starts with Data Item 005 (Security Classification) and ends with the highest numbered data item used for that transaction.

(4) **Message Part.** A message part may contain one or more frequency assignment transactions. Each message part begins with Data Item 005.

(5) **Data Item.** A data item is made up of a data item number, a data item security classification indicator (if required), and the data entry.

(6) **Data Item Number.** A data item number (also referred to as a data item identifier) is used to identify each data item in an SFAF frequency assignment transaction. It consists of a unique 3-digit number followed by a period and a space. For example, (005.) is used to identify the record's security classification. Appendix A contains a sequential listing of all valid data item numbers and applicable remarks/instructions.

(7) **Data Item Security Classification Indicator.** The data item classification indicator is used to indicate the classification of the data entry. This indicator follows the space after the

data item number and is formatted using a single letter enclosed in parentheses followed by a space. The permissible entries are (U) for UNCLASSIFIED, (C) for CONFIDENTIAL, (S) for SECRET and (T) for Top Secret (for special stand-alone applications).

(8) **Data Element.** A data element is the most basic type of data entry. It consists of a series of letters and/or numbers immediately following the data item number or data item security classification indicator. Normally, one data element equates to one data item. For example, **FA** (used in Data Item 113 to denote station class) and **FT BRAGG** (used in data items 301 and 401 to show antenna location) are both data elements.

(9) **Data Entry.** A data entry may contain one or more data elements. For example, **113. FA** is a data entry consisting of the data item number (113.) and one data element (FA); **152. M,NHIA** is a data entry (Coordination Data) consisting of the Data Item number (152.) and two data elements: first, the code for Mexico (M), and second, the amplifying information (NHIA) meaning No Harmful Interference Anticipated. Multiple data elements in the same data entry are separated by a comma or, in some cases, enclosed within parentheses e.g., **110. K6737.5(6736)**.

(a) **Single Occurring Data Entry.** A single occurring data entry may contain either one or more data elements; however, the data entry can appear only once in a frequency assignment transaction. For example, **005. CE,20051231** and **010. N** are both single occurring data entries.

(b) **Multiple Occurring Data Entry.** Data entries that appear more than once in a frequency assignment transaction are called multiple occurring data entries. In some cases, special rules apply as stated in Appendix A. Multiple occurring data entries are formatted with a data item number followed by a data item occurrence identifier, data item security classification indicator (if required), and the data entry.

2. FORMAT

a. **Message Format.** Temporary SFAF frequency assignment transactions are frequently sent via the Automatic Digital Network (AUTODIN) Defense Message System (DMS). The following guidance is provided for the preparation of these messages:

(1) **Headings.** Message headings must be formatted in accordance with approved communications procedures.

(2) **Security Classification.** The overall security classification of the message is based on that of the highest classified data item or combination of data items contained therein. All messages originated or received Outside the United States and Possessions (OUS&P) should have an appropriate releasability statement indicating whether or not the message can be released to host nation officials.

(3) **Subject.** The subject line of the message begins with FREQUENCY PROPOSAL or FREQUENCY ASSIGNMENT, followed by the appropriate clarification as required, e.g., FREQUENCY PROPOSAL, USA. For crisis or contingency requirements, include FOR CONTINGENCY COMMUNICATIONS and the UNCLASSIFIED plan name or number if

available, e.g., FREQUENCY PROPOSAL FOR CONTINGENCY COMMUNICATIONS, USN (OP PLAN 207-81).

(4) **Text.** A message may contain information pertaining to more than one frequency assignment. When this occurs, Data Item 005 (Security Classification) and Data Item 010 (Type of Action) must be the first data items listed in each message part. All data items must be listed in a vertical format and be in numerical sequence. Each line in the message is limited to 69 characters (including spacing and punctuation marks). This limitation is based on the AUTODIN's maximum line-length capability and is not to be confused with the data item input length limitations specified for each data item in Appendix A. If a data item requires more than one line of text, the data item number or data item occurrence identifier must precede each additional line. See paragraph 3c(1) for details on entering more than one line of text for a particular data item.

(5) **Abbreviated Message Format.** An abbreviated message format may be used for frequency proposals whose period of requirement will not exceed 90 days. At a minimum, the following data items must be included: 005, 010, 110, 113, 114, 115, 140, 141, 144, 200, 207, 300, 301, 303, 340, 400, 401, 403, 440, 502, 701, 702, 803, and other applicable data items in the 500 data item series. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF data items 014-019 as required by Appendix A. Note: For Defense Communications Systems (DCS) high-frequency (HF) entry exercises, also include data items 354 and 454; for pulsed emitters also include data items 346 and 347; for aeronautical navigational aids and for air traffic control assignments also include data items 711 and 801.

b. **Automated Processing of Formatted Files.** Automated transactions prepared for transmittal from one computer to another either via the Secure Internet Protocol Routing Network (SIPRNET) or by STU-III secure devices must begin with the given file name, followed by a data string of the transaction(s) beginning with Data Item 005 through Data Item 999. These formatted files may be created on personal computers (PCs), using an editor or word processing software. The files created must be saved in the American Standard Communications Information Interface (ASCII) or equivalent text format.

3. PROCEDURES

The following procedures must be followed when using the SFAF:

a. **Prohibited Data Entries.** The following symbols should **not** be used as input data:

& (ampersand)	? (question mark)
: (colon)	< (less than)
; (semicolon)	> (greater than)
[(left square bracket)	% (percent sign)
] (right square bracket)	! (exclamation mark)
\ (reversed slant bar)	^ (Insert caret)
# (number/pound sign)	" (quotation mark)
@ (at sign)	' (apostrophe)

b. **Restricted Data Entries.** The parenthesis () cannot be used as part of text data in any data item since its use is reserved for data entry classification following the data item number(s) or as part of Data Item 110. Other data restrictions are shown below:

(1) The slant bar may be used as data in data items 020, 112, 302, 340, 341, 343, 355, 362, 402, 440, 443, 455, 462, 501, 502, 503, 504, 511, 512, 513, 520, 530, 707, 804, 983, and 985.

(2) The comma can only be used as data in data items 014, 018, 108, 145, 152, 501, 503, 504, 520, 803, and 804.

(3) The dash cannot be used in data items 301 and 401.

c. **Data Item Occurrence Identifiers.** Slant bars and commas may be used as data item occurrence identifiers as indicated below:

(1) **Slant Bars.** Slant bars are used to identify the order of occurrence of such data when modifying an existing record (e.g., **500/2. S165**).

Order of occurrence identifiers are not used for the following free-text data items where each line begins with only the 3-digit number: 502, 520, 531, 801, 804, 806, and 807.

(2) **Commas.** Commas are used to separate elements within a data entry (e.g., **152. M,NHIA**). However, commas and slant bars cannot be used interchangeably; that is, if input instructions specify a comma, a slant bar cannot be used and vice versa.

d. **Receiver Location Identifiers.** Receiver location identifiers consisting of the letter R and a 2-digit number (01 through 30) are used to indicate whether the data is associated with the first, second, third, etc., receiver location. The receiver location identifier is entered immediately following the data entry reported for that data item. Consider, for example, **400. CO,R02** in which **400.** (State/Country) is the data item identifier, **CO** (Colorado) is the data entry for that item, and **R02** indicates that the data applies to the second receiver location. Note: If no receiver location identifier is specified, the first occurrence is assumed (e.g., **400. CO**).

e. **Data Item Purge Identifier.** A dollar sign following a data item number (e.g., **152. \$**) indicates that the data item is to be purged from the existing record. If a data entry contains more than one data element, then the entire entry is deleted. If a data item contains multiple data entries, the order of occurrence for each entry to be purged must be specified. Consider for example, **207/2. \$** and **207/3. \$**. In this example, the data item occurrence identifiers (**/2** and **/3**) indicate that the second and third operating unit designators in the record are to be purged. All remaining entries will be automatically renumbered during the purge process. Note: If a data item occurrence identifier is not specified, the first occurrence is assumed (e.g., **207. \$**). A data item being purged cannot be followed by an entry to add data in the same data item, except for data items 502, 520, 531, 804, 806, and 807 which are discussed in Appendix A.

f. **Types of Actions.** Six types of actions are used for the input of SFAF frequency assignment transactions (see Appendix A, Data Item 010). A combination of all types can be included in one multiple part message or in an automated transaction file. Formats used for each type of action are described below.

(1) **New (N).** The New action can be used to create frequency assignments from one or more message parts. If one frequency is assigned to a transmitter location, a frequency assignment can be generated using a single message part. Figure 1 is an example of a frequency assignment proposal (or transaction) used to create one HF assignment.

(2) **Modification (M).** The Modification action is used to modify frequency assignments; however, it cannot be used to modify the agency serial number, frequency, or transmitter state/country data items. At a minimum, data items 005, 010, 102, 110, 144 (203 for Army US&P actions), 300, 301, 701, 702, 803, and any data items to be modified or deleted, will be included. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF data items 014-019 as required. (See Appendix A.) When a data item is to be modified, include the data item number and the new data entry. The computer processor automatically deletes the old data entry except for data items 502, 520, 531, 801, 804, 806, and 807; in which case, the new data entry is added to the existing data entry unless those data items are preceded by the data item number and a dollar sign as described in paragraph 3e. See paragraph 4a(3)(f) for modifying classified information in data items 502, 520, 531, and 804. All data items used will be listed in the same sequence as they appear in Appendix A.

Figure 2 is an example of a message frequency proposal (or transaction) used to change Data Item 114, delete the old Data Item 502 data entry, and add a new Data Item 502 data entry.

The receiver location identifier must be used to modify data items when multiple receivers are involved. For example, if the third occurrence of antenna gain for the second receiver location is to be modified, it would be formatted as **457/3. 12,R02**.

Frequency assignment records are normally reviewed every five years or whenever the assignment is modified. The following data items must be submitted when only the review date is to be changed: 005, 010, 102, 110, 144, (203 for Army US&P actions), 300, 301 (504 for Interdepartment Radio Advisory Committee (IRAC) records), 701, 702, and 803. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF data items 014-019 as required by Appendix A. Data items 400 and 401 are also required for satellite downlink receivers. Figure 3 is an example of a frequency assignment proposal (or transaction) used to update a record's review date.

(3) **Deletion (D).** The following data items are required to delete an entire frequency assignment record from the FRRS central database: 005, 010, 102, 110, 144 (203 for Army US&P actions), 300, and 301. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF data items 014-019 as required. (See Appendix A.) Data items 400 and 401 are also required for satellite downlink receivers. Figure 4 is an example of a frequency proposal (or transaction) deleting an assignment from the FRRS central database.

005. UE
010. N
102. AF 881234
110. K4726.5(4725)
113. FA
114. 3K00J3E

115. K10
 130. 1HX
 144. O
 200. USAF
 201. PACOM
 202. PACAF
 204. ACC
 205. 5AF
 206. 475ABW
 207. 1956CG
 209. JPN
 209/2. JPAC
 300. J
 301. TOKOROZAWA
 303. 354750N1393844E
 340. G,AN/GRC-212
 343. PC /05737
 357. 9
 362. S
 363. H
 400. J
 401. OWADA
 403. 354645N1393254E
 406. 3000
 440. G,AN/GRC-212
 443. PC /05737
 457. 6
 462. S
 463. H
 500. E029
 502. AF-OR-CHANNEL. USAF MANAGED ASSIGNMENT
 511. AIR OPERATIONS
 512. AIR/GROUND/AIR OPERATIONS
 513. GLOBAL
 701. T08
 702. ACC 88-005

Figure 1. A Frequency assignment proposal (or transaction) used to create one HF assignment.

(4) **Notification (F)**. This type of action is to be used to notify IRAC that a frequency authorized under a group assignment is being brought into use. This action is based on the authority granted previously by IRAC and when the assignment being created is to be stored in a Government Master File (GMF). The Notification action is formatted the same as a New action, except that the agency serial number of the group assignment record stored in the GMF must be entered in Data Item 105. The Notification action is limited to Military Departments (MILDEPs)/AGENCY USE ONLY.

FM JFP MCEB WASHINGTON DC//NAVEMSCEN//
 TO JFMO PAC HONOLULU HI

<p> AIG 8788 INFO COMPACFLT PEARL HARBOR HI//NSMO/N6// NAVCOMTELSTA GUAM GU//NSMO// BT C O N F I D E N T I A L^a//N02420// MSGID/GENADMIN/NAVEMSCEN/-/JUN// SUBJ/FREQUENCY MODIFICATION USN (U)// REF/A/JFMO PAC HONOLULU HI/021232Z JUN 03// RMKS/1. THE FOLLOWING RESPONDS TO YOUR REQUEST REF A. 005. CH,DEOADR 010. M 014. 19910520, PACOM OP PLAN 91-003 015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED 102. N 773101 110. K16235 113. FX 114. (C) 12K0B9W 115. K10 144. O 300. J 301. TOTSUKA 502. \$ 502. (C) TO SATISFY REQUIREMENT FOR TWO ADDITIONAL VOICE 502. (C) CHANNELS DCS 77BB01 DURING CONTINGENCY OPS. 701. 312 702. NESC 91-001 803. KEITH VAN BLARCOM, DSN 653-0104 </p>
<p>^a Classified for illustration purposes only</p>

Figure 2. Message part frequency proposal (or transaction) used to modify an existing frequency assignment.

<p> 005. UE 010. M 102. AR 733489 110. M32.05 144. Y 203. WS 300. NM 301. WHITESANDS MISSILE RANGE 504. RECORD REVIEW - NO CHANGES 701. A04 702. WSMR91102105 803. T. BANKS, DSN 235-6010 </p>

Figure 3. A frequency proposal (or transaction) used to update a record's review date.

<p> 005. UE 010. D 102. AF 748121 110. M9375 144. Y </p>
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300. TX 301. BERGSTROM 701. T06 702. ACC 81-171 803. B. BERRY, DSN 471-7050

Figure 4. A frequency proposal (or transaction) used to delete a frequency assignment record from the FRRS central database.

(5) **Renewal (R).** Frequency assignment records are normally reviewed prior to their expiration date or whenever they are modified. When only the expiration date is to be changed, the following data items will be submitted: 005, 010, 102, 110, 141, 144 (203 for Army US&P actions), 300, 301, 701, 702, and 803. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF data items 014-019 as required. (See Appendix A.) Data items 400 and 401 are also required for satellite downlink receivers. Enter other data items in the 700 series if applicable. If the record contains Data Item 141 (Expiration Date), and if data items other than Data Item 141 must be updated, a Renewal (R) action must be used, and the other data items must be modified as outlined in paragraph 3f(2). Figure 5 is an example of a frequency proposal (or transaction) used for a renewal action.

005. CE,DEOADR ^a 010. R 102. AR 774489 110. M148.025 141. 19920613 144. Y 203. DW 300. DC 301. WASHINGTON 701. A04 702. MDW0911222 803. SSG SMITH, DSN 335-2486

^a Classified for illustration purposes only

Figure 5. A frequency proposal (or transaction) used for a Renewal action.

(6) **Administrative Modification (A).** This type of action is used to make changes to the FRRS record in the three general categories outlined below.

(a) **Typographical Corrections.** These changes are made to correct information in a database record that is different from that contained in the official document (i.e., the GMF record for US&P assignments).

(b) **Changes to Administrative Data Items.** Changes to administrative data (e.g., the 200 series and/or other non-IRAC data items) are made for standardization or reorganizational reasons, etc. Guidance concerning data items that may be changed for these reasons will be disseminated by a MILDEP, an agency, or a Combatant Commander (COCOM) directive.

Computer editing will be applied to all data items, and the Review Date (Data Item 142) will not be changed unless it is specifically included in the administrative modification request. Input requirements are usually the same as those required for a Modification action (paragraph 3f(2)). In all cases, authority for administrative changes will be the Joint Frequency Panel (JFP) or the appropriate MILDEP, agency, Frequency Management Office (FMO), or COCOM. Figure 6 is an example of a change made to data items 204 and 205.

(c) Multiple Record Changes. Multiple record changes (i.e., identical modifications to 25 or more records) are often required for compliance with international, national, or DoD rules and regulations. Changes to less than 25 records must be processed as individual transactions. Requests for multiple record changes may be made by letter or E-mail. The request must indicate the type of action (Data Item 010 equals M or A) and whether the action to be submitted to the National Telecommunications and Information Administration (NTIA) is to be processed as a record in which Data Item 144 equals Y.

005. UE
010. A
102. AR 834002
110. M36.510
144. N
203. PA
204. USARPAC
205. 1106SIGBDE
300. HI
301. FT SHAFTER
701. A04
702. KDH091102199
803. K.D. HOLTON, DSN 315-438-8219

Figure 6. A frequency proposal (or transaction) used to administratively change an existing database record.

Under current procedures, multiple record changes submitted to NTIA through the Joint Spectrum Center (JSC) processor will result in changing the Revision Date (Data Item 143) in the GMF and the Review Date (Data Item 142) in the FRRS record. Multiple record changes submitted to NTIA via the Frequency Assignment Subcommittee (FAS) representative will result in only the requested data item being changed and the Revision Date will not be changed in the GMF record; in this situation, a copy of the same request must be forwarded to the JSC where an Administrative Modification action will be taken.

Multiple record change requests must also indicate the select criteria required to identify the records that are to be changed and the data items that are to be modified. Multiple record change requests should be carefully thought out and precisely worded to prevent inadvertent modification of nonapplicable records. Input requirements may be supplied by using either the data item number or narrative text. For example:

1. If Data Item 200 equals United States Air Force (USAF) or joint service (JNTSVC) and (a) the agency serial number starts with AF and (b) Data Item 207 equals 376SW,

change Data Item 207 to 388SW. Process multiple record changes with Data Item 010 equal to A and Data Item 144 equal to N.

2. If Data Item 200 equals USA and Data Item 114 equals 6K00A3E, change Data Item 114 to 6K00B9W. If Data Item 144 equals Y, enter Data Item 010 as M. If Data Item 144 equals O, U, or blank, enter Data Item 010 as A.

4. GENERAL RULES REGARDING TRANSACTION SECURITY CLASSIFICATION AND THE PROCESSING OF SECRET FREQUENCY ASSIGNMENT TRANSACTION DATA TO NTIA.

The FRRS central database contains UNCLASSIFIED, CONFIDENTIAL, and SECRET data, plus data requiring special handling instructions (see special handling codes listed under Data Item 005 in Appendix A). The following rules apply to the transaction security classification of such data and to the processing of SECRET frequency assignment transactions submitted to NTIA. See paragraph 5 for the processing of Top Secret (T*S) Data.

a. Transaction Security Classification.

(1) **Data Item 005 (Security Classification).** Data Item 005 is required for all SFAF frequency assignment transactions. For New actions, Data Item 005 must contain the record's security classification and any special handling instructions (note that special handling codes are mandatory for all proposals. For Modification and Deletion actions, Data Item 005 must show the security classification and special handling instructions of the record to be modified or deleted; therefore, the security classification shown in Data Item 005 may be different from the actual security classification of the message or data file used to modify or delete the record. For example, a message or data file containing changes to an UNCLASSIFIED data item in a classified record is, by itself, UNCLASSIFIED unless the change contains data items that are considered classified when listed together. Therefore, an "S" or "C" entered in Data Item 005 of a Modification or Deletion action does not necessarily make that message or data file classified; it only indicates the security classification of the existing SFAF record that is to be acted upon.

(2) **Data Item 006 (Security Classification Modification).** Data Item 006 is only used in conjunction with Data Item 005 to change the security classification, special handling code, or declassification/review instructions of an existing SFAF record. Data Item 005 will contain the record's security classification and special handling instructions as they presently exist, and Data Item 006 will contain the new security classification, special handling code, and declassification/review instructions. Once again, the security classification of the message or data file containing the modification is based solely on the overall content of the message or data file.

(3) **Classification Guide and Entry Procedures for SECRET or CONFIDENTIAL data items.** The following guidelines and procedures apply to classified data items.

(a) For the SFAF, SECRET and CONFIDENTIAL data must be identified by entering an S or C security classification indicator within the parentheses immediately following the data item number (see Figure 7, Data Item 114/2) and Data Item 015 must contain: **"DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED."** A (U) is not

entered for UNCLASSIFIED data items. The security classification indicator is not considered part of the data entry and is therefore not included in the maximum number of data characters permitted. Special handling codes are not entered at the data item level; they are entered only with the overall record security classification in Data Item 005 or 006.

(b) Frequency assignment records maintained in the DoD automated central database cannot be classified higher than SECRET.

(c) Data items are generally classified according to their individual content. However, there may be instances where UNCLASSIFIED data items become classified when associated with other UNCLASSIFIED or classified data items or where CONFIDENTIAL data items may become SECRET when associated with other CONFIDENTIAL or SECRET data items. For example, the frequency, equipment nomenclature, location, emission designation, and power data items may be UNCLASSIFIED as individual data items but become classified when grouped together or when subsets are grouped in various combinations. Therefore, since it is not cost-effective to try to identify the various combinations, all data items within the group must be given the same security classification. The security classification of data items and records with special handling instructions is normally based upon information derived from a source document such as a Security Classification Guide (SCG) or Operations Plan. The identification of this source document must be included in Data Item 014.

(d) Paragraph 3f(1) and Figure 1 show how to create UNCLASSIFIED records and explain the relationship of data item numbers. The following subparagraphs (1 and 2) refer to the data items shown in Figure 7.

1. The special handling code for the overall record is entered only in Data Item 005. Nowhere else in the record should special handling code information be entered except for those records not covered by an existing code. In such cases, free-text special handling instructions may be placed in data items 502 or 503.

2. The Description of Requirement (Data Item 502) provides a description of the assignment and is classified CONFIDENTIAL. Note that although this single data item is entered in paragraph form, the data item number and security classification appear on both lines.

(e) Declassification of the entire record (Figure 7) would require the entry of the present record security classification (**005. CK,DEOADR**), followed by the Security Classification Modification data item (**006. UE**), each classified data item with the classification changed to a "U" or a "blank", and the other data items necessary for a modification as indicated in paragraph 3f(2). This modification would not change the data content, but would change all CONFIDENTIAL data items to UNCLASSIFIED and change the special handling restriction

C O N F I D E N T I A L^a
DATA ITEMS NOT IDENTIFIED AS CLASSIFIED ARE UNCLASSIFIED
SUBJ: FREQUENCY ASSIGNMENT PROPOSAL - USAF (U)
005. CK,DEOADR
010. N
014. 19880311, PACAF OP PLAN 88-002
015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED
102. AF 882345
110. K7624.5(7623)
113. FX

113/2. FX
 113/3. FA
 113/4. FA
 114. 3K00J3E
 114/2. (C) 800H00J2B
 114/3. 3K00J3E
 114/4. (C) 800H00J2B
 115. (C) W400
 115/2. (C) W400
 115/3. (C) W20
 115/4. (C) W20
 130. 3HX
 140. 19881012
 144. Y
 200. USAF
 201. PACOM
 202. PACAF
 204. PACAF
 205. 13AF
 206. 3CSG
 207. ANDERSEN
 209. JGUM
 209/2. JPAC
 300. GUM
 301. ANDERSEN
 303. 134901N1453330E
 340. (C) G,AN/URG99X
 343. PC /09999
 357. 9
 362. S
 363. H
 400. HI,R01
 400. GUM,R02
 400. (C) PAC,R03
 401. WAHIAWA,R01
 401. FINEGAYAN,R02
 401. (C) AIRCRAFT,R03
 403. 212529N1580540W,R01
 403. 133455N1445050E,R02
 440. (C) G,AN/URG99X,R01
 440. (C) G,AN/URG99X,R02
 440. (C) G,AN/URG99X,R03
 443. PC 9999,R01
 443. PC 9999,R02
 457. 9,R01
 457. 9,R02
 457. 9,R03
 462. S,R01
 462. S,R02
 462. S,R03
 463. H,R01
 463. H,R02
 463. H,R03
 500. S141
 502. (C) REQUIRED TO SUPPORT CONTINGENCY AND RECONNAISSANCE
 502. (C) IN THE PACIFIC AREA.
 511. AIR OPERATIONS
 512. EXECUTIVE
 513. (C) AIRBORNE COMMAND CENTER
 701. T08
 702. PACAF 88-0001
 707. 253-11
 803. JOE DOKES, DSN 335-1825

^a Classified for illustration purposes only

Figure 7. Example of an older frequency proposal (or transaction) message part with classified and UNCLASSIFIED multiple transmitter and receiver data.

from **K** to **E**. See Figure 7.1 for an example transaction that would declassify the record in Figure 7.

(f) Paragraph 3f(2) explains the format used to modify UNCLASSIFIED frequency assignments. Figure 8 shows how to modify the classified data items shown in Figure 7. The following subparagraphs (1 through 5) refer to the data items shown in Figure 8.

1. The complete record classification (Data Item 005) must be reentered. Any other security related items (Data items 014-019) must also be reentered. Any changes or additions are made to data items 014-019 where necessary. These repeat entries are necessary so the modification transaction can be

properly handled and protected until the changes are merged into the master database record.

```
SUBJ: FREQUENCY ASSIGNMENT PROPOSAL - USAF (U)
005. CK,DEOADR
006. UE
010. M
014. $
015. $
102. AF 882345
110. K7624.5(7623)
114/2. 800H00J2B
114/4. 800H00J2B
115. W400
115/2. W400
115/3. W20
115/4. W20
144. Y
300. GUM
301. ANDERSEN
340. G,AN/URG99X
400. PAC,R03
401. AIRCRAFT,R03
440. G,AN/URG99X,R01
440. G,AN/URG99X,R02
440. G,AN/URG99X,R03
502. $
502. REQUIRED TO SUPPORT CONTINGENCY AND RECONNAISSANCE
502. IN THE PACIFIC AREA.
513. AIRBORNE COMMAND CENTER
701. T08
702. PACAF 00-084
803. SAM BROWN, DSN 335-1825
```

Figure 7.1 Example of Declassifying an Existing Record and Each Classified Item In the Record

2. The record classification instructions are modified by entering Data Item **006. CK,DEX4** and a new operations plan is reflected in the derivative classification authority (Data Item 014).

3. The first power data entry in Data Item 115 has been increased from W400 to K1.5. Note that the security classification had to be reentered. The second and fourth power data entries (data items 115/2 and 115/4) were downgraded to UNCLASSIFIED (these power data entries could also have been entered as **115/2. (U) W20** and **115/4. (U) W20**). Since there was no change to the third power data entry, no data was entered.

4. Data Item 502 may be entered by using the purge-and-replace technique as follows:

```
502. $
502. New Data
```

Note: If the purge-and-replace technique is **not** used, carefully follow the rules stated in subparagraph 4 below.

```
CONFIDENTIALa
DATA ITEMS NOT IDENTIFIED AS CLASSIFIED ARE UNCLASSIFIED
SUBJ: FIVE-YEAR REVIEW (U)
005. CK,DEOADR
```

010. M
006. CK,DEX4
014. 19960105, PACAF OP PLAN 96-001
015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED
102. AF 882345
110. (C) K7624.5(7623)
115. (C) K1.5
115/2. W20
115/4. W20
144. O
300. J
301. TACHIKAWA
502. JOINT RESPONSIBILITY OF PACAF AND ACC.
701. T08
702. ANG 79-063
803. JOHN DOE DSN 335-1825
^a Classified for illustration purposes only

Figure 8. Example of a frequency proposal (or transaction) message part used to modify a classified record.

5. The new data entry in Data Item 502 is automatically added to the existing data entry shown in Figure 7. If the existing data was to be deleted, a purge identifier (e.g., **502.** \$) would have been inserted on the line preceding the new data entry (see paragraph 3e). **IMPORTANT! THE SECURITY CLASSIFICATION OF A NEW ENTRY WILL AUTOMATICALLY PURGE AND REPLACE THE SECURITY CLASSIFICATION OF THE EXISTING ENTRY.** Therefore, because of the importance of this unique feature, the rules in Table 1 must be followed to ensure that the entire data item is properly classified whenever it is modified. After being modified, Data Item 502 would appear in the record as follows:

502. REQUIRED TO SUPPORT CONTINGENCY AND RECONNAISSANCE
502. IN THE PACIFIC AREA.
502. JOINT RESPONSIBILITY OF PACAF AND ACC.

Note that in the preceding example the entire Data Item 502 entry was downgraded (**IN ERROR!**) from CONFIDENTIAL to UNCLASSIFIED because the new data entry was not classified CONFIDENTIAL. The **correct** data entry should have been:

502. (C) JOINT RESPONSIBILITY OF PACAF AND ACC.

b. Processing Classified Frequency Assignment Transactions to NTIA. The NTIA automated database has been upgraded to process SECRET data. The previous “Z” docket process has been discontinued. If an assignment contains TOP SECRET data, the submitting organization should omit such data and include a comment in the transaction, such as "additional information is not available without a higher clearance, contact the submitting agency." Use of data items shown in Table 2 will determine which organizations are to see the comment and in which database(s), if any, the comment is to be stored.

Table 1 - Rules for Classifying Data Items 502, 520, and 531

R U L E	If the classification of the existing data is:	and the classification of the new data being added is:	then the classification symbol to be entered with the new data must be:

1	(no data)	UNCLASSIFIED	blank or (U)
2	"	CONFIDENTIAL	(C)
3	"	SECRET	(S)
4	UNCLASSIFIED	UNCLASSIFIED	blank or (U)
5	"	CONFIDENTIAL	(C)
6	"	SECRET	(S)
7	CONFIDENTIAL	UNCLASSIFIED	(C)
8	"	CONFIDENTIAL	(C)
9	"	SECRET	(S)
10	SECRET	UNCLASSIFIED	(S)
11	"	CONFIDENTIAL	(S)
12	"	SECRET	(S)

Table 2 - Visibility of Comments

Item	Seen by:	Where stored:
502	DoD only	FRRS central database
503	All US government agencies	In both the GMF and the FRRS central database
504	DoD and all US government agencies	Not stored in any database
801	DoD only	Not stored in any database

c. **Processing UNCLASSIFIED records that when aggregated together are classified CONFIDENTIAL.** The grouping together of **all** UNCLASSIFIED records in the FRRS with special handling codes “B” through “Z” makes the group CONFIDENTIAL.¹ Further, the grouping together of all of the Army or all of the Navy or all of the Air Force or all of the National Security Agency (NSA) UNCLASSIFIED FRRS records with special handling codes “B” through “Z”, also makes these groups of records classified CONFIDENTIAL. In order to identify these records when they are separated from the individual groups discussed above, a special handling code will be entered in each UNCLASSIFIED record that meets the criteria specified in Section 3 of the *DoD Frequency Assignment Security Classification Guide*.

There are exemptions to the grouping of assignments together. These records must have a special handling code “A” (Unlimited Distribution). The exemptions are:

(1) Lists of UNCLASSIFIED frequency assignments ... to Government users that are intended to be made public (examples are travelers information stations, weather broadcast stations, certain stations in the maritime radionavigation and maritime mobile services and stations in the international broadcast services).

¹MCEB-M-001-03, 12 Feb 2003, *DoD Frequency Assignment and Equipment Spectrum Certification Security Classification Guide* dated 1 Jan 2003.

(2) Lists of aeronautical station frequencies under the purview of the Aeronautical Assignment Group (AAG) when used in the National Airspace System.

(3) Lists of UNCLASSIFIED frequency assignment ... records that operate on frequencies authorized to non-Government stations, where such use is necessary to intercommunicate with non-Government stations or for coordination with non-Government activities.

(4) Lists of UNCLASSIFIED frequency assignment ... records for which the release to the general public would have no significant impact to the overall defense² of the United States of America.

5. PROCESSING TOP SECRET (T*S) DATA.

a. **General.** In addition to processing SECRET and CONFIDENTIAL data, the Spectrum XXI system is capable of processing, up to T*S, FRRS data in the stand-alone mode. T*S level users are normally located in Sensitive Compartmented Information Facilities (SCIFs) and **WILL NOT** be exchanging data with other FRRS users via the **SECRET** level SIPRNET. T*S users in SCIFs may exchange data with staff in other SCIFs; however, the data will be passed via networks capable of handling T*S data.

b. **Software Changes to Accommodate T*S Processing.** The major software changes applicable to FRRS SFAF frequency assignment data in the T*S environment are as follows:

(1) The letter “T” is acceptable as an entry in the ‘security classification of the record’ portion of SFAF Data Item 005.

(2) Additional special handling codes are permitted in SFAF Data Item 005.

(3) The letter (T) is permitted as a valid data entry in the Data Item Security Classification Indicator.

(4) The letter “S” is acceptable as a ‘new classification level’ data entry in Data Item 017 Downgrading Instructions.

(5) Certain validation checks pertaining to the above three areas have been changed to accept the new data.

6. SFAF DATA ITEMS USED IN THE SPECTRUM XXI ANALYSIS MODELS.

SPECTRUM XXI has two analysis models that are used to analyze a background environment frequency record. It is important for users to understand what data is used and what combinations of data elements are required to complete a good analysis. The models are the

² The determination of "no significant impact to overall US defense" should be made by the installation, center, or MAJCOM information security offices -- after consultation with offices of primary and collateral responsibility. The determination of no significant impact to overall US defense will result in the assignment of special handling code “A” to the computer record.

Interference Power-Level Model and the Spectral Overlap Model. It is essential that the data items used for these models contain the best data available.

Each of the analysis models is described below. If there are any critical data item relationships used in the calculations, they will be listed as well. A default value notation **(DV)** follows the SFAF Data Item title if, in the absence of SFAF data, a user-defined preference can be used or one that is calculated in the software.

a. Interference Power-Level Model

SPECTRUM XXI includes an Interference Power-Level Model that calculates potential conflicts between a proposed system and existing environmental systems. Potential conflicts can arise as interference to or from the existing environment. Conflicts are declared when the calculated interference power level from a given transmitter exceeds the interference threshold level of the receiver. Below is a list of factors that are taken into consideration when calculating the interference power-level. Included are the associated SFAF data items that are used in these calculations.

(1) Transmitter Power -Transmitter power from the possible offending transmitter is the starting point of the interference calculations.

115. Transmitter Power **(DV)**

(2) Transmitter and Receiver Antenna Names and Gain Calculations -Antenna gains are added to the transmitter power and are an essential part of the interference calculation.

- 354. Tx Antenna Name
- 357. Tx Antenna Gain **(DV)**
- 454. Rx Antenna Name
- 457. Rx Antenna Gain **(DV)**

(3) Effects of Off-Axis Antenna Gain Discrimination With Directional Antennas – If the transmit antenna and the receive antenna are not mainbeam-to-mainbeam, the mutual antenna gain is reduced. The models that are used to calculate the off-axis gains can be found in the SPECTRUM XXI help file under the Antenna Coupling topic.

- 362. Tx Antenna Orientation **(DV)**
- 462. Rx Antenna Orientation **(DV)**

(4) Antenna Polarization Mismatch Loss – If the polarization of the transmitter and receiver are different, the mutual gain is reduced further by a default value contained in the software. This table can be found in the SPECTRUM XXI help file under the topic Polarization Loss.

- 363. Tx Antenna Polarization **(DV)**
- 463. Rx Antenna Polarization **(DV)**

(5) Emission Spectrum and Receiver Selectability Characteristics - The effects of the frequency, emission, and receiver selectivity (calculated) are considered in the interference calculation.

- 110. Frequency
- 113. Station Class
- 114. Emission Designator **(DV)**
- 115. Transmitter Power **(DV)**
- 346. Tx Pulse Duration

(6) Propagation Path Loss –Based upon the information available, SPECTRUM XXI will use either the Terrain Integrated Rough Earth Model (TIREM), the Spherical Earth Model (SEM), or the Free-Space Model to compute the propagation path loss. TIREM, which is supported by a terrain database, is employed for all path-loss calculations in the 1-MHz to 20-GHz frequency range, provided that terrain data is available. SEM will automatically replace TIREM during an analysis for the following reasons: (1) if a radius of operation is associated with the transmitter and/or receiver station, (2) if the terrain data needed is absent, or (3) if there are less than three elevation points in the transmitter-receiver path profile. The free-space propagation formula is used outside the 1-MHz to 20-GHz range.

- 110. Frequency
- 303. Tx Antenna Coordinates
- 306. Tx Authorized Radius
- 359. Tx Antenna Feed Point **(DV)**
- 403. Rx Antenna Coordinates
- 406. Rx Authorized Radius
- 459. Rx Antenna Feed Point **(DV)**

(7) Fixed and Mobile Logic – During an interference analysis or electronic warfare analysis, certain fixed and mobile frequency records are processed through a set of logic cases and analysis records are created that will most accurately reflect how the system is deployed. This set of logic cases is referred to as the Fixed and Mobile Logic. Analysis records are created for each emission set (station class, emission, and power) in a record and for each receiver. Some frequency records contain a transmit station and a receive station with the implication that the receive station is transmitting back to the transmitting station on the same frequency. This implies that there is a receiver at the original transmit location. In these instances the software will create the analysis records for the implied stations.

Only FRRS and GMF frequency records that have a frequency between 30 MHz and 1 GHz and have the following station classes are processed through the Fixed and Mobile Logic.

FX, FA..., FB..., FC..., FL..., and all Mobiles, specifically MA..., ML..., MO..., and MS... A frequency record that is processed through the Fixed and Mobile logic may be altered for the analysis depending upon values in the record. The following four parameters affect how the record is altered: the Station Class (SFAF item 113), the Radius (SFAF item 306/406), the IRAC record notes (SFAF item 500), and the Site Elevation (SFAF item 358/458). In addition, some of the parameters, such as antenna height, gain, polarization, and azimuth are also modified by the logic. For example, mobile stations with a station class of MO will have 10000 feet automatically added to the existing antenna height (SFAF item 359/459). Records with a station class of MA have 30000 feet automatically added to the existing antenna height.

Records with a station class of ML have 2 meters automatically added to the antenna height. The Fixed and Mobile Logic topic in SPECTRUM XXI help contains all of the specifics.

- 113. Station Class **(DV)**
- 303. Tx Antenna Coordinates
- 306. Tx Authorized Radius
- 358. Tx Antenna Elevation
- 359. Tx Antenna Feed Point Height **(DV)**
- 403. Rx Antenna Coordinates
- 406. Rx Authorized Radius
- 458. Rx Antenna Elevation
- 459. Rx Antenna Feed Point Height **(DV)**
- 500. IRAC Notes

Note: If a record does not contain a station class (SFAF item 113), the default value is FX.

(8) Other Model Considerations

(a) Interference Flags – During the import process and for some analyses, records may be tagged with an interference flag. There are eight possible flags – SNOTES, SPACE, AREA, COORDINATES, ERROR, USER, BAND and EXP. Explanations for these flags can be found in the Interference Flag topic of SPECTRUM XXI help. These records will **not** be analyzed but are flagged for manual analysis.

- 110. Frequency
- 113. Station Class **(DV)**
- 300. Tx State/Country 301. Tx Antenna Location
- 303. Tx Antenna Coordinates
- 306. Tx Authorized Radius
- 358. Tx Antenna Elevation
- 400. Rx State/Country
- 401. Rx Antenna Location
- 403. Rx Antenna Coordinates
- 406. Rx Authorized Radius
- 458. Rx Antenna Elevation
- 500. IRAC Notes

(b) Start and End Dates – For temporary records only, the start and end dates are used for nomination, interference analysis, and EW deconfliction.

- 140. Start Date **(DV)**
- 141. End Date **(DV)**

b. Spectral Overlap Model

If, during an analysis, conflicts are declared for the entire set of proposed frequencies, SPECTRUM XXI will execute the Spectral Overlap Model. In this case, no path loss is calculated and no power levels are computed. The model will find unoccupied space within the spectrum in which to place the proposed system without overlapping occupied spectrum. Conflicts are declared when there is an overlap between the interfering transmitter emission

bandwidth and the victim receiver passband. Spectral overlap is not executed if a single frequency is being analyzed for the proposed system. For a more detailed explanation refer to the Models Used to Calculate Interference topic in SPECTRUM XXI help.

- 110. Frequency
- 114. Emission

APPENDIX A - GUIDE TO THE SFAF DATA ITEMS

1. All data items listed in this appendix are not required for every frequency assignment transaction. Required data items are based on type of radio service, i.e., radionavigation, aeronautical radionavigation, space, etc. Data item numbers not listed are reserved for future use. Data items 982 through 999 are used only in tactical operations.
2. Data items marked with footnote³ are reserved for use by headquarters of the Army, Navy, Air Force, Defense Information Systems Agency (DISA), NSA, and COCOMs. Agencies may authorize use of these data items by subordinates, as desired.
3. The information presented for each data item is formatted as follows: Each data item starts with the data item name and number in bold print. The second line begins with the maximum number of characters (including spaces) that can be entered for that data element. The maximum number of characters does not include the data item number itself, the slash (if present), the occurrence identifier, the period and space following the data item number, the security classification indicator (U, C, S, or T) when present, the space following the security classification indicator or the receiver location identifier. The maximum number of characters is followed by the maximum number of occurrences allowed to be entered in a single database record or at each receiver location in a single database record.
4. Since many data items are recognized by NTIA, the GMF tag is included for reference purposes. The INPUT REQUIREMENT contains the rules for submission and any examples needed for clarification of the rules of submission.
5. Table A1 lists the SFAF data item number, title, SPECTRUM XXI tag, the data element maximum input length, the maximum number of occurrences permitted in a database record and also indicates whether or not the data item is forwarded to NTIA. In those few instances where the number of characters sent to NTIA is less than the input length, the number of characters sent to NTIA is included in the To IRAC column.

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC ^a	GMF Tags
ADMINISTRATIVE DATA						
005	Security Classification	CLA,CDD,FOI ^m	2,10	1	Y	CLA, CDD, FOI ^c
006	Security Classification Modification	CLA,CDD,FOI ^m	2,10	1	Y	CLA, CDD, FOI ^c
007 ^h	Missing Data Indicator	MSD	1	1	Y	MSD
010	Type of Action	TYP	1	1	Y	TYP
014	Derivative Classification Authority	CLF	8,60	10	Y35	*CLF ^b
015	Unclassified Data Fields	CLU	72	1	Y35	*CLU ^b
016	Extended Declassification Date	CDE	35	1	Y	*CDE ^b
017	Downgrading Instructions	DNG	1,8	1	Y	*AGN,DNG ^b
018	Original Classification Authority	OCA	60	1	Y35	*CLA ^b
019	Reason for Classification	CLR	35	1	Y	*CLR ^b
020	Proposal References		64	10	N	
102	Agency Serial Number	SER	10	1	Y	SER
103	IRAC Docket Number	AUS	8	10	N ⁱ	AUS
105	List Serial Number	LSN	10	1	Y	LSR
106 ^f	Serial Replaced, Delete Date	SRS,SEX	10,8	1	Y	SRS,SEX
107	Authorization Date	AUD	8	1	N ⁱ	AUD
108	Docket Numbers of Older Authorizations	DOC	35	30	Y	*DOC
EMISSION CHARACTERISTICS						
110	Frequency(ies)	FRQ,FRU	11,11-11,11(11)	1	Y	FRQ,*FRB ^b
111	Excluded Frequency Band	FBE	23	30	Y	*FBE ^b
112	Frequency Separation Criteria		35	1	N	
113	Station Class	STC	4	20	Y	STC
114	Emission Designator	EMS	11	20	Y	EMS
115	Transmitter Power	PWR	9	20	Y	PWR
116	Power Type		1	20	N	
117	Effective Radiated Power		6	20	N	
118 ^j	Power/ERP Augmentation		1	20	N	
TIME/DATE INFORMATION						
130	Time	TME	4	1	Y	TME
131	Percent Time		2	1	N	
140	Required Date		8	1	N	
141	Expiration Date	EXD	8	1	Y	EXD
142	Review Date		8	1	N	
143	Revision Date	RVD	8	1	N ⁱ	RVD
144	Approval Authority Indicator		1	1	N	
145	ITU BR Registration		1,20	1	N	
146	DCS Trunk ID		6	20	N	
147	Joint Agencies	JNT	4	20	Y	*JNT
151	Coordination Indicator	ICI	1	1	Y	ICI
ORGANIZATIONAL INFORMATION						
200	Agency		6	1	N	

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC ^a	GMF Tags
201	Unified Command		8	10	N	
202	Unified Command Service		8	10	N	
203	Bureau	BUR	4	1	Y ^c	BUR
204	Command		18	1	N	
205	Subcommand		18	1	N	
206	Installation Frequency Manager		18	1	N	
207	Operating Unit		18	10	N	
208	User Net/Code	NET	6	1	Y5 ^d	NET
209	Area AFC/DoD AFC/ Other Organizations		18	10	N	
TRANSMITTER LOCATION DATA						
300	State/Country	XSC	4	1	Y	XSC
301	Antenna Location	XAL	24	1	Y	XAL
302	Station Control	XRC	18	1	Y8	XRC
303	Antenna Coordinates	XLA XLG	15	1	Y	XLA XLG
304	Call Sign	XCL	10	1	Y8	XCL
306	Authorized Radius	XRD	5	1	Y	*RAD ^b
SPACE STATIONS						
315	Equatorial Inclination Angle	XIN	4	1	Y	*ORB ^b
316	Apogee	XAE	5	1	Y	*ORB ^b
317	Perigee	XPE	5	1	Y	*ORB ^b
318	Period of Orbit	XPD	7	1	Y	*ORB ^b
319	Number of Satellites	XNR	2	1	Y	*ORB ^b
321	Power Density	SPD	4	1	Y	SPD
TRANSMITTER EQUIPMENT						
340	Equipment Nomenclature	XEQ	1,18	10	Y	*EQT ^b
341	Number of Stations, System Name	NTT,NAM	5,29	3	Y	*NRM ^b
342 ^j	Aircraft Nautical Mile Value	XNM	4	1	N	*RAD ^b
343	Equipment Certification Identification Number		15	10	Y	*AGN,JFA ^b
344 ^h	Off-the-shelf Equipment	EQS	6	10	Y	*EQS ^b
345	Radar Tunability	TUN	2	1	Y	*EQT ^b
346	Pulse Duration	PDD	9, 9-9	30	Y	*EQT ^b
347	Pulse Repetition Rate	PRR	9, 9-9	30	Y	*PRR ^b
348	Intermediate Frequency		11	1	N	
349	Sidelobe Suppression		1	1	N	
TRANSMITTER ANTENNA DATA						
354	Antenna Name	XAT	10	10	Y	XAD
355	Antenna Nomenclature	XAK	18	10	Y	*EQT ^b
356	Antenna Structure Height		3	10	N	
357	Antenna Gain	XAG	4	10	Y	XAD,*EGN ^b , *SGN ^b
358	Antenna Elevation	XSE	5	10	Y	XAD
359	Antenna Feedpoint Height	XAH	5	10	Y	XAD
361	Antenna Vertical Beamwidth		3	10	N	
360	Antenna Horizontal Beamwidth	XBW	4	10	Y	XAD,*EBW ^b , *SBW ^b

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC ^a	GMF Tags
373 ^j	JSC Area Code		1	1	N	
374	ITU Region		1	1	N	
RECEIVER LOCATION DATA (Maximum receiver locations allowed: 30) ^k						
400	State/Country	RSC	4	1	Y	RSC
401	Antenna Location	RAL	24	1	Y	RAL
402	Receiver Control	RRC	18	1	Y8	RRC
403	Antenna Coordinates	RLA RLG	15	1	Y	RLA RLG
404	Call Sign	RCL	10	1	Y8	ACL
406	Authorized Radius	RRD	4	1	Y	*RAD ^b
407 ^j	Path Length		5	1	N	
408	Repeater Indicator	RPT	1	1	Y	*RPT ^b
SPACE STATIONS (Maximum receiver space stations allowed: 30) ^k						
415	Equatorial Inclination Angle	RIN	4	1	Y	*ORB ^b
416	Apogee	RAE	5	1	Y	*ORB ^b
417	Perigee	RPE	5	1	Y	*ORB ^b
418	Period of Orbit	RPD	7	1	Y	*ORB ^b
419	Number of Satellites	RNR	2	1	Y	*ORB ^b
RECEIVER EQUIPMENT (Maximum receiver locations allowed: 30) ^k						
440	Equipment Nomenclature	REQ	1,18	10	Y	*EQR ^b
442	Aircraft Nautical Mile Value	RNM	4	1	N ⁱ	*RAD ^b
443	Equipment Certification Identification Number		15	10	N	
RECEIVER ANTENNA DATA (Maximum receiver locations allowed: 30) ^k						
454	Antenna Name	RAT	10	10	Y	RAD
455	Antenna Nomenclature	RAK	18	10	Y	*EQR ^b
456	Antenna Structure Height		3	10	N	
457	Antenna Gain	RAG	4	10	Y	RAD,*SGN ^b , *EGN ^b
458	Antenna Elevation	RSE	5	10	Y	RAD
459	Antenna Feedpoint Height	RAH	5	10	Y	RAD
460	Antenna Horizontal Beamwidth	RBW	4	10	Y	RAD,*EBW ^b , *SBW ^b
461	Antenna Vertical Beamwidth		3	10	N	
462	Antenna Orientation	RAZ,RAA	3 3,3 3,3-3	10	Y	RAZ,RAD
463	Antenna Polarization	RAP	1	10	Y	RAP
470	Space Station Noise Temperature	SNT	4	10	N	
471	Earth Station System Noise Temperature	RNT	4	10	N	
472	Equivalent Satellite Link Noise Temperature	ENT	4	10	N	
473	JSC Area Code		1	1	N	
SUPPLEMENTARY DETAILS						
500	IRAC Notes	NTS	4	10	Y	NTS
501	Notes free-text Comments	NOT	35	30	Y	*NTS ^b
502	Description of Requirement	GEN	1440	1	N	
503	Agency Free-text Comments	AGN	35	30	Y	*AGN ^b

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC ^a	GMF Tags
504	FAS Agenda or OUS&P Comments	FAS	72	5	Y	FAS
505	NATO Pooled Frequency Code Number		5	1	N	
506	Paired Frequency	PRD	11,10,12	30	Y	*PRD ^b
511	Major Function Identifier	MFI	30	1	Y	*MFI ^b
512	Intermediate Function Identifier	IFI	30	1	Y	*IFI ^b
513	Detailed Function Identifier	DFI	30	5	Y	*DFI ^b
520	Supplementary Details	SUP	1080	1	Y	SUP
521	Transition and Narrow Band Planning Data	TRN	8,13	1	Y	*TRN ^b
530	Authorized Areas	XAR,RAR,ARB	3,35	30	Y	*ART,*ARR,*ARB ^b
531	Authorized States	AST	3,35	6	Y	*LST,*LSR,*LSB,*EST,*ESR,*ESB ^b
OTHER ASSIGNMENT IDENTIFIERS						
701	Frequency Action Officer		3	1	Y ^l	*AGN,FAO ^b
702	Control/Request Number		15	1	Y ^o	*AGN,CNO ^b
704	Type of Service		1	1	Y	*AGN,TOS ^b
707	PACOM Complement/ FMSC Function Number		8	20	N	
710	Host Country Docket Number		35	10	N	
711	Aeronautical Service Range and Height		6	1	N	
715	Transmitter FMSC MRFL Number		14	1	N	
716	Usage Code		1	1	N	
ADDITIONAL INFORMATION						
801 ^f	Coordination Data/Remarks		60	20	N	
803	Requestor Data	POC	60	1	N	
804	Tuning Range/Tuning Increments		60	30	N	
805 ^f	Date Response Required		8	1	N	
806 ^f	Indication if Host Nominations are Acceptable		60	10	N	
807 ^f	Frequencies to be Deleted		60	10	N	
901	Record Status		1	1	N	
903	Proposal Status	CPS	4	20	N	
904	Status Date	STD	8	20	N	
905 ^g	Proposal Date Time Group		14	1	N	
906 ^g	Originator		66	1	N	
907	Validation Status		1	1	N	
910	Exercise Project		20	1	N	
911 ^j	Date of Last Transaction	DAT	8	1	N	
924	Data Source Indicator		4	1	N	
926 ^j	Semi-Bandwidth		12	1	N	
927 ^j	Date of Entry		8	1	N	
928 ^j	Date of Receipt		8	1	N	
950	PC ID	PCI	10	1	N	

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC ^a	GMF Tags
952 ^j	IRAC Security Classification		1	1	Y	CLA
953 ^j	IRAC Declassification Date		10	1	Y	CDD
956	Agency Action Number	ACN	10	1	Y	ACN
957 ^j	Review Year	RYP	4	1	Y ^h	RYP
958 ^j	Routine Agenda Item	RTN	1	1	Y	RTN
959 ^j	Circuit Remarks	REM	40	30	N	REM
963	FCC File Number	FLN	22	1	Y ^h	*FLN ^b
964 ^j	Tx Aircraft Altitude		3	10	N	XAD
965 ^j	Rx Aircraft Altitude		3	10	N	RAD
982 ⁱ	JCEOI Line Number		5	1	N	
983 ⁱ	JCEOI Master Net List Name		16	1	N	
984 ⁱ	Net Frequency Range		11-11	1	N	
985 ⁱ	Joint Restricted Frequency List (JRFL) Protection Code		1, 1/2	1	N	
986 ⁱ	Net Tactical Call Word		15	1	N	
987 ⁱ	Net Tactical Call Sign		3	1	N	
988 ⁱ	Net Tactical Air Designator (TAD)		5	1	N	
989 ⁱ	Net Color Word		16	1	N	
990 ⁱ	Net Color Number		2	1	N	
991 ⁱ	Net Restoral Priority		3	1	N	
992 ⁱ	Net Push Number		3	1	N	
993 ⁱ	Band Usage		1	1	N	
994 ⁱ	Check Sum		1	1	N	
995 ⁱ	COMSEC Keymat		15	1	N	
996 ⁱ	Circuit Type, Line Item, Group Category		8	1	N	
997 ⁱ	JCEOI Special Net Instructions		63	1	N	
998 ⁱ	Net Notes		3	1	N	
999 ⁱ	Guard Requirements		20	50	N	

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC ^a	GMF Tags
<p>a Y = Yes, N = No, a number = the number of characters sent to NTIA (FAS of the IRAC).</p> <p>b This data item is stored in the GMF Circuit Remarks. Circuit Remarks are limited to 30 occurrences.</p> <p>c A special handling code in the second character of the security classification is sent to NTIA as FOI X</p> <p>d Army and NSA only.</p> <p>e Army only.</p> <p>f Not stored in the FRRS central computer facility (CCF) database.</p> <p>g For distributed computer facility (DCF) use only.</p> <p>h Not used by DoD</p> <p>i Computer-generated by NTIA (IRAC).</p> <p>j Computer-generated by JSC.</p> <p>k A maximum of 30 receiver locations are allowed in a frequency assignment record. The number of occurrences in items 400 - 473 are related to the number of occurrences that are permitted at each receiver site. For example, only one item 400 is permitted at a site, while 10 equipment nomenclatures are permitted at any single receiver site. (In other items, the maximum number of occurrences relate to the number of occurrences permitted in a complete record.)</p> <p>l Army, Navy, and Air Force only.</p> <p>m If data sent to NTIA is different from the data entered, see SFAF data items 952 and 953.</p> <p>n *USA is a GMF output field used in Canadian records.</p> <p>o Navy and Air Force only.</p>						

ADMINISTRATIVE DATA

Administrative Data - Data items 005, 006, 010, 020, and 102 through 108 provide data to initiate the processing of frequency assignments.

Security Classification005

2,10 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: FOI (for any Special Handling Code listed below), (CLA, CDD if the same as sent to NTIA.)

Description: Data Item 005 has two parts. Part one contains a 2-letter designator representing the security classification of the record and the record special handling instructions. The second part of the item contains a 10-character field containing the record declassification instructions. The record declassification instructions must always be entered if the first character of the security classification is a “C,” “S,” or “T.”

Classification Codes - First Character

U - UNCLASSIFIED **C** - CONFIDENTIAL **S** - SECRET **T** - TOP SECRET

Special Handling Codes - Second Character

A Special Handling Code is required in all UNCLASSIFIED frequency assignment records as well as in TOP SECRET, SECRET, or CONFIDENTIAL records to reflect the fact that if the classified data were removed from the record, the remaining UNCLASSIFIED data must still be protected in accordance with the applicable special handling code. Remember, this could apply in instances where SECRET or CONFIDENTIAL records are sent to NTIA as UNCLASSIFIED records for inclusion in the GMF automated database.

- A** - Approved for public release; distribution is unlimited (DoD Directive 5230.24).
- B** - Releasable to soil country and the North Atlantic Treaty Organization (NATO); otherwise, not releasable outside the US Government in accordance with (IAW) Section 552 (b)(1) of Title 5 of the US Code.
- E** - Not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- F** - Not releasable to foreign nationals and not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- H** - Releasable to soil country only; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

- J** - Contingency Assignment - The record contains unified commander comments only; not releasable to foreign nationals unless formally coordinated; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code
- K** - Permanent assignment. Available for contingency use within the theater after coordination with and approval of the cognizant unified commander - releasable to soil nation; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- N** - Releasable to NATO; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- P** - Proprietary; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

The following special handling codes are used within TOP SECRET stand-alone databases and are not to be used within the FRRS worldwide SIPRNET database system:

- L** - Sensitive Compartmented Information; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- Q** - Special Category (SPECAT); otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- R** - Special Access Required (SAR); otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

Declassification Instructions

For TOP SECRET, SECRET, or CONFIDENTIAL records, follow the security classification with a comma, and the appropriate declassification instruction, using one of the following formats:

DEYYYYMMDD - Declassify on: Enter **DE** followed by the year (**YYYY**), the month (**MM**) and the day of the month (**DD**). If the declassification date set at the time of the original classification action is to be extended beyond 10 years, a data entry is required in Data Item 014.

DEOADR - Declassify on: Originating Agency Determination Required. If DEOADR is used in a record, an entry is required in Data Item 014. (Note the term **DEOADR** is a derivative declassification notation and is no longer a valid term if the source document is over 5 years old or if the date of the source document is greater than 14 Oct 2000. Operational users creating new assignments based upon documents not meeting the above date test should contact the originator of the original document to obtain declassification instructions that are in accordance with the requirements of E.O. 12958 dated 13 Oct 1995.)

Examples:

005. UE

005. CB,DE20051130

005. SE,DEOADR

DEXnnnnnnnn - Declassify on: Exempt from automatic declassification. The letters “nnnnnnnn” indicate one or more reasons (see list below) why TOP SECRET, SECRET, and CONFIDENTIAL records cannot be automatically declassified. Enter **DEX** followed by one to seven numbers, in numerical order, applicable to the appropriate reason(s) listed below.

- 1- Reveal an intelligence source, method, or activity, or a cryptologic system or activity.
- 2- Reveal information that would assist in the development or use of weapons of mass destruction.
- 3- Reveal information that would impair the development or use of technology within a US weapons system.
- 4- Reveal US military plans or national security emergency preparedness plans.
- 5- Reveal foreign government information.
- 6- Damage relations between the US and a foreign government, reveal a CONFIDENTIAL source, or seriously undermine diplomatic activities that are reasonably expected to be ongoing for a period greater than ten years.
- 7- Impair the ability of responsible US government officials to protect the president, the vice president, and other individuals for whom protection services, in the interest of national security, are authorized.
- 8- Violate a statute, treaty or international agreement.

Examples:

005. SH,DEX1 (one reason for exemption from automatic declassification)

005. CJ,DEX134 (three reasons for exemption from automatic declassification)

DE25Xn - Declassify on: Permanently valuable information (as defined by the national archivist) is exempt from automatic declassification 25 years beyond the original classification date. (The letter “n” indicates why a TOP SECRET, SECRET, or CONFIDENTIAL record cannot be automatically declassified 25 years after the original classification date.) Enter

DE25X followed by a number "n" from the applicable paragraph below. Note: When the value of "n" is greater than "1", an entry is required in Data Item 016

- 1- Reveal the identity of a CONFIDENTIAL human source, or reveal information about the application of an intelligence source or method, or reveal the identity of a human intelligence source when the unauthorized disclosure of that source would clearly and demonstrably damage the national security interests of the US.
- 2- Reveal information that would assist in the development or use of weapons of mass destruction.
- 3- Reveal information that would impair US cryptologic systems or activities.
- 4- Reveal information that would impair the application of state-of-the-art technology within a US weapon system.
- 5- Reveal actual US military war plans that remain in effect.
- 6- Reveal information that would seriously and demonstrably impair relations between the US and a foreign government, or seriously and demonstrably undermine ongoing diplomatic activities of the US.
- 7- Reveal information that would clearly and demonstrably impair the current ability of US Government officials to protect the president, vice president, and other officials for whom protection services, in the interest of national security, are authorized.
- 8- Reveal information that would seriously and demonstrably impair current national security emergency preparedness plans.
- 9- Reveal information that would violate a statute, treaty, or international agreement.

Example:

005. SH,DE25X5

Input Requirement: Data Item 005 is always required. Enter the overall security classification of the frequency proposal or assignment and the appropriate special handling code. When applicable, each UNCLASSIFIED frequency assignment must have a special handling code so it can be identified as a record that has been separated from a CONFIDENTIAL group defined in the *DoD Frequency Assignment Security Classification Guide*.¹⁾ As a security precaution, this data item cannot be deleted from a record and can only be changed by use of Data Item 006.

Security Classification Modification006
2,10 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: See Data Item 005.

Description: Data Item 006 specifies the **new** security classification and/or special handling code that is to be assigned to an existing record and/or a change to the declassification instructions.

Input Requirement: If the record's security classification, special handling code, or declassification instructions are to be changed, enter the new security classification data and make appropriate classification code changes to the data items that are affected. (Data Item 006 must always be preceded by Data Item 005 to show the record's **existing** security classification.)

Examples:

006. UE

006. CB,DEOADR

006. SB,DE19980715

Missing Data Indicator007

1 character - 1 occurrence

Submitted to IRAC: yes GMF tag: MSD

Description: The indicator that, in accordance with the NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management, one or more of the required data elements for the frequency authorization or frequency application have not been entered.

Input Requirement: Not used by DoD. Non-DoD organizations enter the letter Z to indicate that one or more of the required data elements has not been included in the automated record. (Note, the complete record must be separately submitted to NTIA as a paper document.)

Example:

007. Z

Type of Action010

1 character - 1 occurrence

Submitted to IRAC: yes GMF tag: TYP

Description: Data Item 010 indicates the type of action required to process the frequency assignment transaction.

Input Requirement: Data Item 010 is always required and must contain one of the type of action codes described below.

A - Administrative Modification. This action is similar to a Modification (M) action; however, it is used to make three specific types of changes:

- (1) Changes due to typographical errors in the authorizing document
- (2) Changes in administrative data items (e.g., 200 series)

- (3) Mass changes required for compliance with international, national, or DoD rules and regulations.

The review date (Data Item 142) will not be automatically changed if a Administrative Modification action is used.

- D - Delete.** Used to remove an existing record from a database.
- E - Expired.** A computer-generated code used by NTIA to remove an expired record from the GMF and its matching record from the FRRS.
- F - Notification.** Used to notify the activation of a frequency for a particular station or stations under the authority of a group assignment. Data Item 105 must also be specified.
- M - Modification.** Used to add, substitute, or remove one or more data items in an existing record.
- N - New.** Used to create a new record and place it in the appropriate online database.
- R - Renewal.** Used to extend the expiration date of a temporary assignment. Other data may be changed as necessary.

Example:
010. M

Derivative Classification Authority014

8,60* characters - 10 occurrences

Submitted to IRAC: yes GMF tag: *CLF

Description: This data item indicates the date, title, and publishing organization of the source document from which one or more TOP SECRET, SECRET, or CONFIDENTIAL data entries in the record were derived.

Input Requirement: This data entry is required when the DECLASSIFICATION INSTRUCTIONS in Data Item 005 contain “DEOADR” or when the classification of data is “Derived From” other sources such as security classification guides, J-12 documents, or operations plans. The data entry will be the source date (formatted YYYYMMDD (year-month-day)), a comma followed by the title and the publishing organization. (An entry in Data Item 018 is not required when Data Item 014 is used.) Whenever all of the multiple sources are entered, the most restrictive declassification instruction from all of the sources used must be entered in the second part of Data Item 005.

Examples:

014. 19930815, B-1B SCG, OC-ALC/LAB
014. 19921122, OPLAN 2104, PACOM
014/2. 19870614, J-12 5502/4, USAFFMA

(a single example)

(a two document example)

When the original classification authority extends a declassification date in Data Item 005 beyond the initial ten-year period, this field may be used to identify the date the declassification date was extended, the individual, and individual's agency or organization that approved the extension. This entry is not necessary when the classification is derived from another source, and the source is identified in accordance with the subparagraph above.

Example:

014. 20051105,CDR PACOM

* Data in records where SFAF Data Item 144 equals "Y" cannot exceed 35 characters until NTIA lengthens the GMF field.

Unclassified Data Fields.....015

72* characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *CLU

Description: This data item alerts the reader of a printed or automated displayed record that there are instances when UNCLASSIFIED data entries are not preceded by the entry (U) in a CONFIDENTIAL, SECRET, or TOP SECRET assignment.

Input Requirement: This data item is required for all classified records. Note, even though all data entries in a record are classified, there are UNCLASSIFIED data entries, computer-generated by the JSC.

Example A:

(for use in CONFIDENTIAL and SECRET FRRS records)

015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED

Example B:

(for use only in TOP SECRET stand-alone operations)

015. DATA ENTRIES NOT PRECEDED WITH (C), (S) OR (T) ARE UNCLASSIFIED

* Data in records where SFAF Data Item 144 equals "Y" cannot exceed 35 characters until NTIA lengthens the GMF field. The current GMF data entry is automatically converted from the above SFAF data entry to the standard GMF entry: REMnn *CLU,ALL DATA NOT LISTED IN *CLC OR *CLS

Extended Declassification Date016

35 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *CDE

Description: Data Item 016 contains a declassification date (in the format YYYYMMDD) that is beyond 25 years from the date of original classification.

Input Requirement: Data Item 016 is required when Data Item 005 contains DE25Xn, where the value of “n” is greater than 1.

Example:

016. 20351231

(for Dec 31, 2035)

In rare instances, a textual entry may be present.

Downgrading Instructions.....017

1,8 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *AGN,DNG-

Description: This data entry is a two-part field. The entry contains the new classification level (“C” for Confidential or “S” for Secret), followed by a comma and the date (YYYYMMDD) the record is to be downgraded from SECRET to CONFIDENTIAL or downgraded from TOP SECRET to either SECRET or CONFIDENTIAL.

Input Requirement: Data Item 017 is required whenever there are downgrading instructions contained in the source from which the classified data in the record was derived.

Example:

017. C,19991105

Original Classification Authority018

60* characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *CLA

Description: This data item indicates the title and organization of the individual who determined the original classification of the classified data in the assignment record.

Input Requirement: Required when classification information is **not** derived from another document such as a classification guide, J-12 paper, or operations plan (see Data Item 014). Enter the title and organization of the original classification authority.

Examples:

018. CDR,AMC

018. CDR,AFMC

018. CDR,7FLT

If the identification of the original classification authority reveals additional classified information, an entry of “018. EXCLUDED, 1.7.B” is permitted.

* Data in records where SFAF Data Item 144 equals "Y" cannot exceed 35 characters until NTIA lengthens the GMF field.

Reason for Classification019

35 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *CLR

Description: This data item contains a coded data entry indicating the reasons the original classification authority determined that the data in this assignment was classified.

Input Requirement Required when classification information is **not** derived from another document such as classification guides, J-12 documents, or operations plans. Enter the reason for the classification from the list provided below. The data entry will be **1.5** followed by one or more letters in alphabetical order applicable to the appropriate paragraphs below.

A - Military plans, weapons systems, or operations

B - Foreign government information

C - Intelligence activities (including special activities), intelligence sources or methods, or cryptology

D - Foreign relations or foreign activities of the US, including confidential sources

E - Scientific, technological, or economic matters relating to the national security

F - US Government programs for safeguarding nuclear materials or facilities

G - Vulnerabilities or capabilities of systems, installations, projects or plans relating to national security.

Examples:

019. 1.5A

019. 1.5EG

In rare instances, a textual entry may be present such as “FOREIGN RELATIONS.”

Example:

019. FOREIGN RELATIONS

Proposal References.....020

64 characters - 10 occurrences³

Submitted to IRAC: no GMF tag: None

Description: Data Item 020 is the originating requester’s message date-time-group (DTG), E-mail or letter reference.

Input Requirement: (Optional). Enter the requester’s message DTG with a Plain Language Address Designator (PLAD) or other reference. This information will appear in FRRS transaction files only; it will not appear in the GMF or FRRS central databases.

³This data item is reserved for use by MILDEP, COCOM, and Agency frequency management offices or subordinate organizations when its use has been delegated to lower levels.

Example:

020. NFCWUS 041325Z DEC 87

Agency Serial Number.....102

10 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: SER

Description: Data Item 102 is the primary FRRS record identifier. It is unique and cannot be changed.

Input Requirement: The agency serial number is required for all types of actions that will be entered into the FRRS central database. The serial number is formatted as AAAAYYNNNN. The agency abbreviation (identifier) for the assignment (as defined in the *NTIA Manual* or as listed below) is entered in characters 1-4 (AAAA). When AAAA is less than four characters, trailing spaces are required; the next two numbers (YY) identify the calendar year in which the assignment initially is processed; the following four numbers (NNNN) are specified to uniquely identify the assignment. The following are agency serial number identifiers for MILDEP/JFP frequency assignments

IDENTIFIER	ORGANIZATION
AF	Air Force
AR	Army
CEN	CENTCOM - Central Command
EUR	EUCOM - European Command
J	DoD
LA	JFCOM - Joint Forces Command
N	Navy
NS	NSA
PAC	PACOM - Pacific Command
SOU	SOUTHCOM - Southern Command

Example:

102. N 775163

Interdepartment Radio Advisory Committee Docket Number..... 103

8 characters - 10 occurrences

Submitted to IRAC: no GMF tag: AUS

Description: Data Item 103 is a reference number assigned by the IRAC to frequency applications submitted to the FAS. Automated databases provide ten IRAC docket numbers in the following order:

1. Docket number for current modification
2. Original docket number

3-10. Docket numbers for previous modifications or renewals in inverse [chronological](#) order.

Input Requirement: Data Item 103 is an NTIA computer-generated GMF output data item.

List Serial Number..... 105

10 characters - 1 occurrence³

Submitted to IRAC: yes GMF tag: LSR

Description: Data Item 105 is the agency list serial number of a GMF record representing a group or area assignment. It brings into use, by a particular station or stations, a frequency authorized under a group assignment or authorized for communications with nongovernment stations.

Input Requirement: Only enter the List Serial Number of a GMF group or area assignment if a Notification (F) action is used.

Example:

105. N 765530

Serial Replaced, Delete Date 106

10,8 characters - 1 occurrence³

Submitted to IRAC: yes GMF tag: SRS, SEX

Description: A record may be deleted from the GMF using Data Item 106 while entering a New or Notification type of action. This is a two-part data item. The first part of the data item is the serial number of the GMF record being deleted and the second part of the data item is the date the record will be automatically deleted from the GMF. This data item is not stored in the database.

Input Requirement: If an existing GMF assignment record is to be deleted using a New action or a Notification action, enter the agency Serial Number of the existing assignment followed by the desired date of deletion as YYYYMMDD. If multiple records are to be deleted based on a single new assignment, **one** record can be deleted using the Serial Replaced, Delete Date data entry and the others can be deleted using separate Delete actions.

Example:

106. N 820512,19981005

Authorization Date.....107

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: AUD

Description: The date (YYYYMMDD) on which a GMF assignment was originally authorized.

Input Requirement: This is an NTIA computer-generated GMF output data item only.

Example:
107. 19971105

Docket Numbers of Older Authorizations.....108

35 characters - 30 occurrences³

Submitted to IRAC: yes NTIA tag: *DOC

Description: Data Item 108 provides a history of an assignment's previous GMF authorizations. It allows New or Notification type of actions to retain all previously assigned docket numbers, authorization dates, and agency serial numbers.

Input Requirement: This data item is optional. Enter up to 35 alphanumeric characters for Docket Numbers of Older Authorizations to be retained in a New action

or a Notification action as applicable. Multiple docket entries are allowed within a 35-character line by separating them with a comma. Authorization dates and serial numbers may also be entered along with the docket numbers within a 35-character line by separating them with commas.

Examples:

108.	I84729	- Docket only
108.	I73621,195704	- Docket and date
108.	I67543,195510,N 550142	- Docket, date, and serial number
108.	I89432,I6723419	- Two dockets
108.	I6943591,AF 690431	- Docket and serial number

EMISSION CHARACTERISTICS

Data items 110 through 118 contain the command process of designating a required frequency, and the relationship of the frequency with controlling factors such as station class, emission designators, and power.

Frequency(ies)110

11 or 11-11 or 11(11) characters - 1 occurrence

Submitted to IRAC: yes GMF tag: FRQ or *FRB

Description: Data Item 110 is the frequency band or discrete frequency assigned to the unit and/or required for the equipment described in the assignment. A reference frequency, if included, is the assignment of a suppressed or reduced carrier sideband.

Input Requirement: This data item is always required. Enter the discrete frequency or frequency band assigned to the unit and/or required for the equipment described in the assignment. A reference frequency, if included in parenthesis, is the assignment of a suppressed or reduced carrier sideband. For a frequency band assignment, enter the lower frequency and the upper frequency (separated by a dash) with the frequency unit indicator preceding the lower frequency. An upper frequency range unit indicator is required if the units of the upper frequency range is different from the units of the lower frequency range, e.g. 110. K2000-M35.

For certain operations, the assignment of a range of frequencies (frequency band) may be required in lieu of a specific operating frequency. These types of assignments shall only be requested when specific frequencies will not satisfy the requirements. Frequency band assignments are normally authorized for the following:

- a. Transmitters which automatically sweep through all frequencies in a band.
- b. Radiosonde transmitters operating in either of the bands: M400.15 - 406.0 or M1670 - 1700.
- c. Frequency-agile radar beacons (racon) operating in either of the bands: M2900 - 3100 or M9300 - 9500.
- d. Transmitters that use automatic frequency selection based on changing propagation conditions along the transmission path.
- e. Transmitters that automatically pause at 15 or more specific operating frequencies within a band.
- f. Operations that require the use of 15 or more specific operating frequencies within a band for Research, Development, Test and Evaluation (RDTE) purposes.
- g. Operations that involve a multitude of mobile radiolocation or radionavigation transmitters. Whenever possible, at the option of the applicant, operational frequencies may be recorded in Data Item 503.
- h. Tactical and/or training assignments (above 30 Megahertz (MHz)) that require the use of 15 or more specific operating frequencies within a band.
- i. Operations devoted exclusively to Electronic Warfare (EW), Electronic Countermeasures (ECM), and/or Electronic Counter-Countermeasures (ECCM). For sideband operations, enter the reference frequency in parentheses after the assigned frequency.

Precede the frequency value with unit indicators as follows:

- K** - if frequency is less than 30 MHz
- M** - if frequency is at least 30 MHz, but less than 100 GHz
- G** - if frequency is at least 100 GHz, but less than 3 THz
- T** - if frequency is 3 THz or greater.

Insert a decimal point only if there is a significant digit to the right of the decimal point.

Examples:

- 110. K17034
- 110. K6737.5(6736)
- 110. K2000-M30

For frequency band(s) that are to be excluded from a given frequency band, enter the excluded bands in Data Item 111.

Example:

110. M13250-15700

111. M14770-14930

Special Consideration for Processing Frequency Entries

Frequency(ies), and frequency bands listed in FRRS records cannot be changed. However, the data item classification and reference frequencies may be changed. It should be noted that the changing of the classification of the frequency from or to SECRET in FRRS records sent to NTIA for inclusion in the GMF is not permitted. A new record must be created if the frequency is being changed from or to SECRET.

Excluded Frequency Band111

23 characters - 30 occurrences

Submitted to IRAC: yes GMF tag: *FBE

Description: Data Item 111 is used in conjunction with a frequency band assignment to designate portions of the band excluded from the assignment.

Requirement: If a portion of a frequency band entered in Data Item 110 is to be excluded, enter the frequency band(s) to be excluded (in ascending order). An upper frequency range unit indicator is required if the unit of the upper frequency range is different from the unit of the lower frequency range.

Examples:

111. M960-1770

111/2. M2200-2400

Frequency Separation Criteria112

35 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 112 identifies the required frequency separation between the different radio sets operated at one transmitter or receiver location.

Input Requirement: Data Item 112 is required for EUCOM and CENTCOM assignments. It is optional for all others. Enter the required frequency separation (Δ), in MHz, between the different radio sets operated at one location.

0.5 MHZ - For a transmitter power below 24.8 dBW (300 watts), enter 0.5 MHZ

2 MHZ - For a transmitter power above 24.8 dBW (300 watts), enter 2 MHZ

2.0 - 9.9 MHz - For an exceptionally high transmitter powers, enter values between 2.0 MHz and 9.9 MHz.

If radio sets have two or more power stages, enter the dBW value and F for each power stage.

Note: This data is required in order to avoid desensitizing the receivers if two or more UHF radio sets are operated at one location simultaneously, e.g., at a tower. This data also is required to establish the prerequisites for an interference-free radio communication.

If, in radio relay frequency requests, a minimum frequency separation between a number of transmitters or between a transmitter and a receiver must be observed, these separation frequencies are to be entered. Enter the value in MHz. Use the following abbreviations and separate them with slashes:

TX - Transmitter

RX - Receiver

Examples:

112. 0.5 MHz

112. 2.0 MHz

112. TX/TX40MHZ/TX/RX100MHZ

Station Class113

4 characters - 20 occurrences

Submitted to IRAC: yes GMF tag: STC

Description: Data Item 113 identifies the functional use of the assigned frequency at a particular transmitting station. See Annex A to this appendix for a list of acceptable station class symbols and their definitions. The suffix *R* is included if a station is used primarily as a repeater and operates in the bands 29.89-50 (exclusive Government use), 138-144, 148-149.9, 150.05-150.8, 162-174, and 406.1-420 MHz.

Input Requirement: Enter one or more standard station class symbol(s). (Data items 113, 114, 115 and (116 for Europe only) are interrelated, and an entry in any of the three data items must be accompanied by a corresponding entry in the other data items.)

Examples:

113. FX

113/2. FX

Emission Designator114

11 characters - 20 occurrences

Submitted to IRAC: yes GMF tag: EMS

Description: Data Item 114 identifies the necessary bandwidth and emission classification symbols. The bandwidth can be determined by using formulas shown in the ITU Radio Regulations, CCIR Recommendations, or the NTIA Manual. Emission classification symbols

consist of the three required symbols and the two optional symbols shown in Tables A-B-1 and A-B-2 in Annex B to this appendix.

Input Requirement: Enter one or more emission designator(s) containing the necessary bandwidth and the emission classification symbols. Enter the necessary bandwidth using the first four characters (three digits and a unit designator letter are required), with the unit designator in the position the decimal would normally occupy. Use:

H - If the value is less than 1000 Hz

K - 1 kHz to values less than 1000 kHz

M - 1 MHz to values less than 1000 MHz

G - 1 GHz or greater.

A doppler shift shall not be included in the frequency tolerance or bandwidth of emission; however, when a doppler shift is significant, it should be reported in Data Item 520.

Examples:

- a. For a frequency assignment with a single emission designator, enter :
114. 3K00J3E

- b. Similarly, for a frequency assignment with two emission designators, enter:

114. 1K24F1B

114/2. 3K00J7B

- c. If the same emission is to be used for two different station classes, enter the emissions twice:

114. 100H00F1B

114/2. 100H00F1B

- d. To enter multiple emission designators, enter them on subsequent lines as shown below:

114. 3K00J3E

114/2. 3K00J1D

114/3. 1K10F1B

114/4. 100H00A1A

114/5. 3K00J3E

114/6. 100H00A1A

- e. To change the third emission designator in a record containing three or more emissions, enter:

114/3. 1K24F1B

- f. If the third emission designator is to be deleted, the corresponding entries in data items 113/3 (Station Class) and 115/3 (Power), 116/3 (Power Type) must also be deleted. For example:

113/3. \$

114/3. \$

115/3. \$

116/3. \$

(For Europe only)

Transmitter Power115

9 characters - 20 occurrences

Submitted to IRAC: yes GMF tag: PWR

Description: Data Item 115 identifies the maximum transmitter power output authorized to be used.

Input Requirement: Enter one or more power data entries. Enter (1) carrier power (pZ) for A3E sound broadcasting in the broadcasting service, (2) mean power (pY) for other amplitude modulated emissions using unkeyed full carrier, and for all frequency modulated emissions, and (3) peak envelope power (pX) for all emission designators other than those referred to in (1) and (2) above, including C3F television (video only). Express the power to a maximum of five decimal places and precede the entry with the unit designator as follows:

W - If power is less than 1000 watts

K - If power is at least 1 kW but less than 1000 kW

M - If power is at least 1 MW but less than 1000 MW

G - If power is 1 GW or greater.

Examples:

115. W0.5

115/2. K1.5

Power Type116

1 character - 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 116 describes the power type code for either carrier, mean, or peak envelope power emitted. The power type code will depend on the type of emission of the transmitter equipment.

Input Requirements: Data Item 116 is required for EUCOM and CENTCOM assignments. It is optional for all others. Enter the power type code as defined below. The number of occurrences should match the number of occurrences in Data Item 115. The types of power codes are listed below:

C - Carrier Power

Use this for "N0N" and for "A3E" sound broadcasting service

(Station Class "BC").

M - Mean Power

(For all A/A & A/G/A). Use this for most AM emissions using unkeyed full carrier and all frequency modulated emissions. Typical emissions include A2A, A2B, A3C, A3E, A3F, A7B, AXX, F1B, F1C, F2B, F3E, F3F, F7B, FXX, H2A, H3E, and H7B.

P - Peak Envelope Power

Use this for all pulsed equipment, C3F Television, and the following classes: A1A, A1B, A7B, B7B, B8C, B8E, BXX, C3F, G3E, J2B, J3E, J7B, JXX, K1B, K2B, K3E, K3F, L2B, M2B, M3E, P0N, PXX, R2B and R3C.

Examples:

116. P

116/2. P

Effective Radiated Power117

6 characters - 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: This is the power radiated from the transmitter antenna. It is the sum of the power supplied to the antenna and the gain of the antenna, expressed in dBm.

Input Requirements: Data Item 117 is filled in some Federal Communications Commission (FCC) and ITU records and is computer-generated by the JSC in other instances. The Effective Radiated Power (ERP) is entered in dBm.

Example:

117. 40

Power/ERP Augmentation118

1 character - 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: This is a coded data entry that is used to indicate when either Data Item 115 (Power) or Data Item 117 (ERP) is computer-generated.

Input Requirement: This is a JSC computer-generated output data item. One of the following codes was used:

P - power field (Data Item 115) computer-generated
E - ERP field (Data Item 117) computer-generated
Blank - neither field was computer-generated

Example:

118. P

TIME/DATE INFORMATION

Data items in this section contain data related to implementation of the assignment, time period when frequency is to be used, expiration/review data, indicators for further processing, registration through international channels, and identifiers of trunk service and/or joint assignment use.

Time.....130

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: TME

Description: Data Item 130 describes the period of time when the frequency will be either guarded (monitored) or used for transmission. The period indicated is not a limitation or a restriction, but rather the period when the frequency must be available to satisfy its operational requirement. The data entered shall indicate (1) whether the frequency is required occasionally or on a regular basis, and (2) whether it is required only during the normal workweek (between 0600 and 1800, Monday through Friday) or for additional periods of time.

Input Requirement: This data item is required on regular assignments using frequency bands 29.89-50, 138-144, 148-149.90, 150.05-150.80, 162-174, and 406.10-420 MHz, except those for experimental stations and those with IRAC Notes (Data Item 500) S321 and S322. For all other bands at 29890 kHz and above, this data item is required for assignments with US, USA, or USP in Data Item 300 (transmitter State/Country). Use the appropriate number as follows:

- 1** - Regular, not limited to workweek
- 2** - Regular, workweek
- 3** - Occasional, not limited to workweek
- 4** - Occasional, workweek.

For stations in the fixed service below 29890 kHz, the above number will be followed by one of the following symbols to indicate the time of availability on a daily basis:

HX - For stations operating intermittently throughout the 24-hour day or for circuits with no specific working hours

HN - Night service

HJ - Day service

H24 - Continuous 24-hour service

HT - For transition period service.

Examples:

130. 2
130. 1H24

Percent Time.....131

2 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 131 describes the percentage of time the transmitter equipment is in use during the scheduled hours of operation.

Input Requirement: Data Item 131 is required for EUCOM Germany (GE) assignments. It is optional for all others. Enter the percentage of use during the scheduled hours of operation.

Example:

131. 50

Required Date.....140

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 140 is the date a new assignment or modification to an assignment is to be operational.

Input Requirement: Enter the year, month, and day (YYYYMMDD) the new assignment, or modification to an existing assignment, is required by the operating unit. For temporary or exercise proposals, enter the date frequencies will first be used.

Example:

140. 19990101

Expiration Date141

8 Characters - 1 occurrence

Submitted to IRAC: yes GMF tag: EXD

Description: Data Item 141 is the date when a temporary assignment is to expire. Temporary assignments are not to exceed five years. This data item is blank when Data Item 142 contains data.

Input Requirement: If the assignment is for less than five years, enter the year, month, and day (YYYYMMDD) the requirement for use of the assignment will end. This data item is used in conjunction with Data Item 140 to specify the period of time an assignment will be used. For example, a proposal for an exercise or test from 7 September 1990 through 21 September 1990 would contain the entries **140. 19900907** and **141. 19900921**. Note: Assignments will be automatically canceled on their expiration date and deleted from the DoD central database. If a permanent assignment is being changed from an assignment with an expiration date to an assignment with a review date, then Data Item 141 must be deleted, i.e., **141. \$**.

Example:
141. 20020622

Review Date142

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 142 is the date by which the assignment is to be reviewed according to the FRRS review program. If records are processed to IRAC, the review date will be regenerated based on the FAS meeting date plus five years for all assignments except AAG/MAG assignments for which ten years are added to the FAS meeting date.

Input Requirement: If Data Item 141 is blank or is being deleted, and if Data Item 142 is not entered by the assignor, Data Item 142 will be computer-generated by the JSC, based upon the data entered in Data Items 102, 143 and 958. Enter the year, month, and day (YYYYMMDD) if the desired review date is less than five years or less than 10 years if the record is a European Command (EUCOM), Aeronautical Advisory Group (AAG) or Military Advisory Group (MAG) assignment. (If Data Item 141 contains an expiration date, leave the review date blank.)

Example:
142. 20020331

Revision Date143

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: RVD

Description: The date (YYYYMMDD) on which the GMF frequency assignment was initially approved or most recently revised.

Input Requirement: Data Item 143 is an NTIA computer-generated GMF output data item.

Example:
143. 19960131

Approval Authority Indicator144

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 144 indicates whether or not the assignment is to be processed to IRAC for approval.

Input Requirement: The approval authority indicator is required on all DoD transactions. Use the appropriate code listed below:

Y - Assignment record is to be processed through IRAC.

U - Assignment record is inside the US&P and is **not** to be processed through IRAC.

O - Assignment record is OUS&P and is **not** to be processed through IRAC.

N - An existing IRAC assignment contains Data Item **144. Y**, but this transaction is **not** to be processed through IRAC. The data being changed will not be stored in the GMF record.

Note: FRRS records that contain Data Item 144 equal to O or U **cannot** be changed to Data Item 144 equal to Y. A new transaction must be submitted.

Example:

144. Y

ITU BR Registration.....145

1,20 characters - 1 occurrence³

Submitted to IRAC: no GMF tag: None

Description: Data Item 145 indicates the action taken, or to be taken, to register an assignment with the International Telecommunication Union (ITU) Radiocommunication Bureau (BR).

Input Requirement: Data Item 145 indicates the status of the assignment's registration with the ITU BR. Enter the appropriate indicator from the following list:

- R** - Notified and registered by BR
- U** - Notified to BR but negative decision
- I** - Registration with BR on an insistence basis
- O** - Not notified to BR
- P** - Pending notification to BR
- M** - Registered with BR but needs to be modified
- Y** - BR registration required.

If amplifying comments are to be included, enter a comma following the indicator and then the comments. If a registration date is to be included in the comments, enter the date (YYYYMMDD) first, followed by a comma and any other information.

Example:

145. R,19690527,2A

DCS Trunk ID146

6 characters - 20 occurrences³

Submitted to IRAC: no GMF tag: None

Description: Data Item 146 is the Defense Communications System (DCS) trunk identifier assigned by DISA. See Chapter 66 of DISAC 310-65-1.

Input Requirement: Enter the DCS trunk identifier when assigned by DISA.

Examples:

146. 45CS01
146/2. 45US02

Joint Agencies.....147

4 characters - 20 occurrences³

Submitted to IRAC: yes GMF tag: *JNT

Description: Data Item 147 identifies a joint assignment used by two or more agencies.

Input Requirement: Data Item 147 is required when Data Item 200 equals JNTSVC. For a joint application, enter the appropriate abbreviation of the joint agencies. Use the abbreviations as shown in Annex G of the *NTIA Manual*. Enter the agency identified in Data Item 102 as the first joint agency. Enter H for unidentified agencies in non-IRAC assignments.

Example A:

147. AF (USAF and Federal Aviation Administration (FAA) joint assignment)
147/2. FAA

Example B:

147. H (Entry for an unidentified agency)

Coordination Indicator.....151

1 character - 1 occurrence³

Submitted to IRAC: yes GMF tag: ICI

Description: Data Item 151 indicates whether the IRAC is to coordinate the application with the Canadian Government, the Mexican Government, or both. It is also used for EUCOM assignments coordinated with NATO or host nations, or both.

Input Requirement: For assignments near US borders, enter one of the following codes:

- C** - Coordinated with Canada
- M** - Coordinated with Mexico
- B** - Coordinated with both Canada and Mexico

For EUCOM and Atlantic Command (LANTCOM) assignments, enter one of the following codes:

- M** - Coordinated with NATO for inclusion in the Master Radio Frequency List (MRFL)
- H** - Coordinated with Host Nation
- B** - Coordinated with both NATO and Host Nation

Example:

151. C

The coordination indicator is also used to identify the US Government coordination channels for those Canadian assignments along the US/Canada border that have been included in the GMF for EMC analysis purposes:

- D** - Coordinated through NTIA with FAS member agencies
- F** - Coordinated through the FAA
- J** - Coordinated through the DoD's Joint Chiefs of Staff (JCS)
- U** - No indication of coordination.

Coordination Data152

1,35 characters - 30 occurrences³

Submitted to IRAC: yes GMF tag: *CAN and/or *MEX

Description: Data Item 152 consists of comments previously coordinated by the FAS Secretary with Canada and/or Mexico. This is a two-part data item: the first part identifies the country and the second part identifies the comment from that country.

Input Requirement: For new assignments replacing existing assignments (serial replaced actions), enter comments as previously coordinated (by the FAS Secretary) with Canada (C) or Mexico (M). Comments for other new assignments will be entered by the NTIA FAS Secretary when coordination comments are received from Canada or Mexico.

Example:

152. M,780029, NAIA	- (Record with comments received from
152/2. C,750361, NO MOBILE USE	Mexico and Canada)
152/3. C,WITHIN 40 MI RAD OF	
152/4. C,BURNABY BC	

United States comment data added by NTIA staff to Canadian or Mexican coordinated records (as REMnn *USA,) that are contained in the GMF will be formatted in SFAF Data Item 152 as follows:

Examples:

152. U,NHIA, NOTING USE OF M163.4375, U.S.
 152/2. U,NHIA, SERIAL I8701234, DETROIT, MI

ORGANIZATIONAL INFORMATION

Data items 200 through 209 serve two major purposes: (1) As applicable, they identify the frequency management chain responsible for managing the assignment and the organizations having an area interest in the assignment area, and (2) they are also used for the selection and distribution of records. These data items are especially important when assignments are needed promptly to meet mission requirements.

Each frequency assignment has a management chain, from the service headquarters or COCOM down to the operating unit. If logically and consistently entered into the records, the data concerning the organizations in the frequency management chain can be used to select and sort

records in the manner most efficient for use by each management level in the chain. Data Item 200 (Agency) and Data Item 207 (Operating Unit) should always be filled in. There may be occasions when members of the management chain are entered in more than one data item. For example, ACC (the command listed in Data Item 204) could be the operator of a net at Langley AFB. In this case, Langley (the base FMO listed in Data Item 206) could have ACC as an operating unit (Data Item 207). Consistency is the key factor in making these data items work for the good of the system. Each organizational level, from the top down, to and including operating units, must enter its data the same way each time. Although some higher level data entries are standardized by the service or COCOM, at the operating unit level they are frequently not standardized. Therefore, all frequency management levels should ensure the consistency of the data being entered by those elements subordinate to them. Where organizational data content has not been specified by a higher authority, operating units can develop their own, but they **must** be consistent when making data entries in subsequent transactions. Previous variations in organizational data are being "cleaned up" and a periodic review system has been established to maintain data item consistency.

To make this system work, each agency, COCOM, and area frequency coordinator (AFC) should look at its subordinate frequency management structure and decide which frequency management elements will be reflected at which level. In most cases, it is clear; however, there will be situations where it is not clear to the level concerned. For example, in Europe, should the NCTAMSMED entry be entered in data items 203, 204 or 205? Careful, thorough planning and execution should yield a database that can, with a high degree of certainty, provide the proper records via automated data distribution for each FRRS participant. Some organizations having frequency management responsibility may not need all the organizational data items listed. However, those data items used should be entered consistently. For example, if 8AF was also entered as 8F or 8 AF, then all the records for the 8AF would not be grouped together. To reduce this type of problem, the elimination of spaces is required.

Agency200

6 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 200 identifies the agency responsible for managing the frequency assignment. Within the DoD this is normally USA, DON, USAF, or NSA. If an assignment is in joint use by two or more agencies, then both Data Items 147 and 200 must be completed. The responsible DoD agency will be entered as the first data entry in Data Item 147 followed by the other joint agencies. For example, an assignment between USAF and NASA would be entered as **147. USAF, 147/2. NASA and 200. JNTSVC.**

Input Requirement: Enter one of the following service or agency abbreviations as appropriate: USA, DON, USAF, NSA, or JNTSVC. If JNTSVC is entered, Data Item 147 must be completed.

Example:
200. USA

Unified Command201

8 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 201 identifies the unified command (PACOM, EUCOM, SOUTHCOM, CENTCOM, JFMOLANT,NORTHCOM) or designated representative for the area in which the assignment will be used.

Input Requirement: This data item is required for all assignments where either the transmitter or a receiver is located OUS&P.

Example A:

201. PACOM

Example B:

201. EUCOM

201/2. SOUTHCOM

Unified Command Service202

8 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 202 identifies the service-level organization within the unified command area that is responsible for managing the assignment. Within the CONUS, Data Item 202 identifies the Air Force or Army MAJCOM host responsible for the installation listed in Data Item 206.

Input Requirement: Enter the Major Command (MAJCOM) or Specified/Unified Command that has operational control of the installation or region of the world where the transmitter is located (this is not necessarily the Command that has operational control of the assignment). Within the CONUS, Air Force and Army organizations, enter the MAJCOM of the host installation.

Examples:

202. PACAF

202. FORSCOM

Bureau203

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: BUR

Description: Data Item 203 identifies the Bureau to be included in the record.

Input Requirement: Data item 203 is required for Army assignments within the US&P and for all United States Marine Corps (USMC) and Navy (USN) assignments worldwide.

Examples:

203. PA (An Army assignment in the PACOM area)
203. USMC (A Marine Corps assignment)

Command.....204

18 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 204 identifies the Major Command or other applicable organization frequency management level that is subordinate to the responsible agency identified in Data Item 200.

Input Requirement: This data item is required in all assignments. Enter the major command or other applicable organization.

Examples:

204. ACC
204. TRADOC

Subcommand205

18 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 205 indicates the frequency management level between the command (Data Item 204) and the installation frequency manager (Data Item 206), or a level of command below the organization entered in Data Item 204.

Input Requirement: Enter the frequency management level between the command and installation frequency manager.

Example:

205. 5AF

Installation Frequency Manager206

18 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 206 normally indicates the station, base, installation, or fort-level frequency management office responsible for the location of the operating unit.

Input Requirement: Enter the installation frequency manager when it exists.

Examples:

206. ANDREWS
206. BRAGG
206. NASPAXRV

Operating Unit.....207

18 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 207 indicates the name or designation of the organization using the frequency assignment.

Input Requirement: This data item is required. Enter the short name or designation of the organization using the frequency assignment. For PACFLT: Enter ACFT and/or SHIPS when Data Item 300 equals PAC, LANT, INDO, etc.

Examples:

207. 602TCW

207. SUBRON18

207. 517ARTY

User Net/Code.....208

6 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: NET (Only the first five characters of the first data entry)

Description: Data Item 208 is a unique code that identifies the specific user of the frequency, i.e., the command, activity, unit, project, etc.

Input Requirement: Enter codes as directed by the responsible agency, as follows:

Army: Enter one Net Control Code.

Navy: Enter the one Unit Identification Code (UIC) of either the operating unit identified in Data Item 207 or in Data Item 302.

Air Force: Enter a standard use code as directed by Air Force Frequency Management Agency.

Examples:

208. N53618

208. ACEUS

Area AFC/DoD AFC/Other Organizations209

18 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 209 identifies the DoD AFC, COCOM, Service Area Frequency Management Office, or other organization not provided in data items 200-208.

Input Requirement: This data item is optional. Enter the DoD AFC, COCOM, Service Area Frequency Management Office or other organization not provided in data items 200-208. The following standard entries are used for DoD AFCs:

AFCA - DoD AFC Arizona
WSMR - DoD AFC White Sands Missile Range
GAFC - DoD Gulf AFC
EAFC - DoD Eastern Space and Missile Test Center at Cape Canaveral, FL
AF CPR - DoD AFC Puerto Rico
NAFC - DoD AFC Nellis
WAFC - DoD Western AFC
USAKA - DoD AFC Kwajalein

If Data Item 300 equals US, USA, or USP, enter only the following DoD AFC codes respectively:

AFCUS - Area Frequency Coordinator United States
AFCUSA - Area Frequency Coordinator United States of America
AFCUSP - Area Frequency Coordinator United States and Possessions

Example:
 209. JPN

TRANSMITTER LOCATION DATA

Transmitter data items 300 through 306 include all technical information pertaining to a single transmitter location. Only one transmitter location is allowed per assignment record.

State/Country300

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: XSC

Description: Data Item 300 is an authorized abbreviation for the state, country, or geographical area in which the transmitting station is located. This data item cannot be changed in an FRRS record containing 144. Y.

Input Requirement: This data item is required. Enter the name or standardized abbreviation (as listed in Annex C to this appendix) of the state, country, or area in which the transmitting antenna is located.

Examples:
 300. IN
 300. LANT
 300. SPCE

Antenna Location301

24 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: XAL

Description: Data Item 301 is the name of the city, base, or geographical area of operation within which the transmitting antenna is actually located.

Input Requirement: This data item is required. Enter the name of the city, base, or geographical area where the transmitter antenna is located. Abbreviate the data entry if necessary; however, if an abbreviation is not required, the entry should be spelled the same as that in the US postal zip code directory or applicable gazetteer. After being entered the first time, all future entries for that same location should be spelled the same. If the transmitter antenna location is the same as the entry in Data Item 300, the antenna location should be abbreviated using the same abbreviation as that entered in Data Item 300. In addition to the above, the following will apply:

a. The following standard abbreviations will be used even if the entry is less than 24 characters:

Abbreviation	Location Word	Abbreviation	Location Word
ARPT	Airport	IAP	International Airport
ARA	Army Area	IS	Island(s)
CP	Camp	LNB	Large Navigational Buoy
CY	City	MT	Mont, Monte, Mount(s)
CGD	Coast Guard District	MTN	Mountain(s)
CO	County	MAP	Municipal Airport
DI	District	PG	Proving Ground(s)
DIV	Division	PT	Point
FT	Fort	ST	Saint

b. If the location name exceeds 24 characters after applying the standard abbreviation(s) listed in “a” above and the entry has not been previously used, then shorten the entry to 24 characters and enter the full text in Data Item 801 for review by the assignment authority.

If an area of operation is selected, it may be described as a radius, in kilometers, extending from a given location. For example, if an assignment is for transmission anywhere within a 50-kilometer radius of Dallas, then insert DALLAS in this data item and the radius in Data Item 306 (Authorized Radius). An area of operation may also be described by geographical coordinates. For example, if an assignment is for one or more land mobile stations operating south of 33 degrees north in the state of Arizona, then insert AZ in this data item and the coordinate data in Data Item 530 (Authorized Areas).

An area of operation within several states may also be described in this data item as US or USA, with the included or excluded states being shown in Data Item 531 (Authorized States). Similarly, US&P may be used if the area includes a possession. For locations described as an area of operation, note that operations might not occur in every square mile of the area selected and the area described might overlap into states not shown in Data Item 300 (State/Country).

Although the data inserted shall normally be geographical names or descriptions, exceptions may be made for experimental operations, mobile operations where the state/country and antenna location data items are identical (such as 300. PAC, 301. PAC, etc.), and/or space operations. For an assignment to an experimental station, other than one in space, or to a mobile station having identical state/country and antenna location names, words such as AIRCRAFT, BALLOONS, or SHIPS may be used, as appropriate. For an assignment to a station aboard a geostationary satellite, insert GEOSTATIONARY. For an assignment to a station aboard a nongeostationary satellite, insert NONGEOSTATIONARY. For an assignment to a station located on a natural object in space, insert the name of the object, e.g., MOON.

a. **COASTAL WATERS** in DoD spectrum management documentation is defined as all navigable ocean waters, including ports, docks, intracoastal waterways, and the area extending from the coastline (of the state/country described in data item 300 or 400) outward for a distance of 150 nautical miles. Navigable ocean waters is defined as all waters affected by ocean tides in which DoD water craft of any type can operate.

Examples:

301. FT BRAGG

301. NASHVILLE

301. NONGEOSTATIONARY

Station Control302

18 characters - 1 occurrence

Submitted to IRAC: yes

GMF tag: XRC (only the first eight characters)

Description: Data Item 302 is used to identify the operating unit that controls, either electrically or administratively, the transmitting station when it is different from the data entered in Data Item 207. This data item is not used by Air Force.

Input Requirement: This data item is optional. Enter the operating unit or department that controls, either administratively or electrically, the transmitter station if it is different from the transmitter station in Data Item 207.

Example:
302. PWC

Antenna Coordinates303

15 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: XLA, XLG

Description: Data Item 303 is the World Geodetic System 1984 (WGS 84) datum latitude and longitude (expressed in degrees, minutes, and seconds) of the transmitter antenna location entered in Data Item 301.

Input Requirement: This data item is required except when the site named in Data Item 301 is an area of operation for which coordinates cannot be applied or for nongeostationary satellites. Enter geographical coordinates (degrees, minutes, and seconds) for the antenna location. If the seconds are not known, insert 00 for the seconds, except in the case of navigation aid system (NAVAIDS), geostationary satellites, and microwave facilities where seconds are required. Use leading zeros as appropriate for degrees, minutes, or seconds. Degrees latitude require two digits; degrees longitude require three digits. Enter N or S for latitude and E or W for longitude. If *GEOSTATIONARY* has been entered in Data Item 301, enter the latitude as 000000N and the longitudinal position of the satellite (in degrees, minutes, and seconds east or west). Note, when older maps are used, the coordinates may vary as much as 300-400 meters from locations determined by using DoD standard WGS 84 datum maps or Global Positioning System (GPS) equipment. Organizations are encouraged to obtain GPS equipment to determine the position of fixed antennas.

Examples:

303. 214216N1171039W

(Coordinates for a fixed location)

303. 000000N1750000E

(Coordinates for a geostationary satellite)

Call Sign304

10 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: XCL (only the first 8 characters)

Description: Data Item 304 is the international call sign assigned to the transmitting station. For navigational aids, this data item is used for the NAVAIDS identifier instead of a call sign.

Input Requirement: Data Item 304 is used to assign the international call sign to the transmitting station. Leave this data item blank if the call sign is either a local voice or tactical call sign, or if it is not applicable. For navigational aids, enter the NAVAIDS identifier.

Examples:

304. WUH55

304. AVV

Authorized Radius306

5 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *RAD

Description: Data Item 306 defines the area of operation for a portable, mobile, or transportable transmitter station. This area is expressed as a radius in kilometers extending from the geographical coordinates listed in Data Item 303.

Input Requirement: If the station is portable, mobile, and/or transportable, and a circular area is used to describe the area of operation, enter a radius (in kilometers) from the coordinates listed in Data Item 303 to describe the area in which the transmitter station will operate. Add the suffix T to the entry if the radius applies only to the transmitter station, or B if the radius applies to both the transmitter and receiver stations (Note: When both fixed and mobile stations are to transmit on the same frequency, leave this data item blank and enter the radius of the mobile station in Data Item 406). For aircraft stations also enter radius data as part of Data Item 711.

Examples:

306. 30T (Indicates a 30-kilometer radius of operation for the transmitter)

306. 150B (Indicates a 150-kilometer radius of operation for both transmitter and receiver stations)

SPACE STATIONS

Data items 315 through 321 are to be used for transmitter space-station data. Leave data items 315 through 319 blank for geostationary satellites.

Equatorial Inclination Angle315

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *ORB preceding IN

Description: Data Item 315 indicates the angle at which the transmitting NONGEOSTATIONARY satellite's orbit crosses the equator. A nongeostationary satellite is defined as one whose circular orbit does not lie in the plane of the earth's equator and has a specific equatorial inclination, apogee, and perigee.

Input Requirement: Enter an equatorial inclination angle (in degrees), using a decimal point for fractional degrees for nongeostationary space transmitter stations.

Example:

315. 34.7

Apogee316

5 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *ORB preceding AP

Description: Data Item 316 indicates the point in the orbit of a NONGEOSTATIONARY satellite at which it is farthest from the earth.

Input Requirement: Enter apogee (in kilometers) for nongeostationary space transmitter stations.

Example:
316. 23500

Perigee317

5 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *ORB preceding PE

Description: Data Item 317 indicates the point in the orbit of a NONGEOSTATIONARY satellite at which it is nearest to earth.

Input Requirement: Enter perigee (in kilometers) for nongeostationary space transmitter stations.

Example:
317. 200

Period of Orbit318

7 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *ORB

Description: Data Item 318 indicates the time it takes for a NONGEOSTATIONARY transmitter satellite to make one complete orbit.

Input Requirement: Enter the period of orbit for nongeostationary space transmitter stations. If the period of orbit is less than 24 hours, enter the time in hours followed by the letter H. If it is 24 hours or more, enter the number of days, followed by the letter D. Enter the data, using a decimal point for a fractional unit.

Example:
318. 19.6H

Number of Satellites.....319

2 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *ORB preceding NR

Description: Data Item 319 indicates the number of NONGEOSTATIONARY satellite transmitters in a system having similar orbital characteristics.

Input Requirement: Enter the number of nongeostationary satellites in the system.

Example:
319. 1

Power Density321

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: SPD

Description: Data Item 321 indicates the maximum power density, per hertz (in dBW), supplied to an earth or space station's antenna or to those of terrestrial stations (including experimental) employing earth or space-station techniques. For frequencies below 15 GHz, the power shall be averaged over the worst 4 kHz band; for frequencies 15 GHz and above, the power shall be averaged over the worst 1 MHz band. The worst 4 kHz and 1 MHz bands are defined as those having the highest power density within the assigned emission bandwidth.

Input Requirement: For earth, space, or terrestrial stations (including experimental stations) employing earth or space-station techniques, insert the maximum power

density per Hz (in dBW) supplied to the antenna. For negative values, insert a minus sign (-) before the value.

Example:
321. 8

TRANSMITTER EQUIPMENT

Data items 340 through 349 are used for the Transmitter Equipment. When both fixed and mobile stations (FA/MA, FB/ML, etc.) are used, enter the fixed transmitter data first.

Equipment Nomenclature340

1,18 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: *EQT

Description: Data Item 340 has two parts. The first part identifies the type of equipment (government, commercial, or unassigned) and the second part identifies either the standard military nomenclature or the commercial make and model number of the equipment at each specific transmitter station location. If both a military nomenclature and a commercial model number are assigned to the same equipment, the military nomenclature will be used.

Input Requirement: This data item is required. Enter the equipment type code followed by the equipment system or component nomenclature for the transmitter location. (If available, the system nomenclature is preferred rather than the component nomenclature; however, either is acceptable. Data items 340 and 343 are interrelated, and an entry in Data Item 340 should be

accompanied by a corresponding entry in Data Item 343, if known. If Data Item 343 is known, enter the nomenclature exactly as it is recorded in the Spectrum Certification System (SCS) database or J-12 document DD Form 1494.) Enter one of the following equipment type codes:

- G** - Government nomenclature
- C** - Commercial model number
- U** - Unassigned nomenclature

After the equipment type code, enter a comma and then the nomenclature subject to the following:

- a. For a government equipment nomenclature, enter the standard military nomenclature.

Examples:

- 340. G,AN/GRC-103 (A system nomenclature)
- 340. G,T128 (A transmitter component nomenclature)

- b. If only a commercial model number is available, indicate the manufacturer of the equipment, using the manufacturer's code listed in Annex D to this appendix, followed by the model number. If no manufacturer code exists or is unknown, enter the full name of the manufacturer in Data Item 801.

Example:

- 340. C,MOTH23FFN1130E (A commercial handie-talkie manufactured by Motorola, model number H23FNN1130E. A partial nomenclature such as MOTH23 is incomplete since it applies to several different models of Motorola handie-talkies. The manufacturer's name and the complete model number should be obtained from data plates on equipment whenever possible)

- c. If the nomenclature includes a modification, insert MOD and a number, if applicable, immediately following the nomenclature. For the word MARK, insert MK immediately following the nomenclature.

Example:

- 340. G,T238MK1

- d. If the transmitter does not have an assigned government nomenclature or commercial model number, enter the manufacturer's name and a brief description of the equipment listed in Data Item 801.

Example:

- 801. COLLINS RADIO EXPERIMENTAL
- 801. RADAR

Number of Stations, System Name341

5,29 characters - 3 occurrences

Submitted to IRAC: yes GMF tag: *NRM

Description: Data Item 341 is a two part data item. The first part identifies the number of transportable, land-mobile and portable-type stations associated with the assignment and the second part identifies the name of the system involved. A station is one or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment necessary at one location for carrying on a radio communication service. A system is considered two or more equipment having a common property, usually geographic, administrative, functional, or operational in nature.

Input Requirement: In the 30-50, 138-144, 148-149.9, 150.05-150.8, 162-174, and 406.1-420 MHz bands, enter the number of land mobile stations, ship stations, and transportable stations associated with the assignment (if desired this data may be entered on assignments in other bands or for aircraft stations). The number entered shall represent either the exact number of stations or a range of numbers as follows:

Number of Stations	Enter
1-10	10
11-30	30
31-100	100
101-300	300
301-1000	1000
1001-3000	3000
3001-10000	10000
Above 10000	Nearest 10000

If the exact number is to be recorded, and it is 10, 30, 100, 300, 1000, 3000, or a multiple of 10000, add one to the number to distinguish it from a figure that represents a range of numbers. System names shall be determined by the applicant and must not be longer than 18 characters. The word NET (or letter "N") may be used as the system name.

Example:

341. 1001,NET

Also, you may enter N if the assignment represents an entire system; enter S for all other cases. To enter a system name only, enter XXXXX, a comma, and the system name (see the last Example).

Examples:

341. 31,N

341. XXXXX,RANGE COORDINATION

TX Aircraft Nautical Mile Value.....342

4 characters - 1 occurrence

Submitted to IRAC: no GMF tag: *RAD

Description: Data Item 342 contains the transmitter radius of aeronautical assignment group frequency area of operation in nautical miles and is computer-generated from Data Item 306.

Input Requirement: This is an NTIA computer-generated output data item.

Example:

342. 26

Equipment Certification Identification Number343

15 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: *AGN,JFAn-

(n = the occurrence number in older records where there is more than one entry.)

Description: Data Item 343 indicates the certification number assigned to the transmitter equipment or system by the MCEB J-12 Working Group.

Input Requirement: Enter the equipment J-12 certification number (DD Form 1494) if known.

The entry is formatted **CCCCCC/nnnnn/nn** where **CCCCCC** is six characters and can be a combination of spaces or characters, and the seventh position is always a slash “/”. The **nnnnn** is the numerical portion of the entry which designates the number assigned to the piece of equipment. All five digits must be filled. Use leading zeros when necessary. If there is more than one document for a particular piece of equipment, a revision number may be added to the basic number by adding either **/n** or **/nn**. (Data items 340 and 343 are interrelated, and an entry in Data Item 343 must be accompanied by a corresponding entry in Data Item 340.) Note: If an SCS database or a DD Form 1494 exists and is available, use it as the source from which to obtain the correct information to complete Item 340. Data will be formatted as follows:

Prefix	Definition
J/F 12	A US document that has not been approved for foreign release
AC	A US document approved for release in the Joint Forces Command area
CC	A US document approved for release in the Central Command area
EC	A US document approved for release in the European Command area but not through NATO channels
PC	A US document approved for release in the Pacific Command area
SC	A US document approved for release in the Southern Command areas
DA	A US document approved for release direct to specific defense attaché office in a foreign nation
C/F299	A document approved for release to the CCEB nations (Australia, Canada, New Zealand, United Kingdom, and the United States of America)

Examples:

343. J/F 12/01234

(A non releasable US J-12 document)

343. PC /01234

(The first releasable J-12 document for a piece of equipment in the Pacific Command area.)

If more than one document is to be released for a piece of equipment in a specific area, the prefix may also contain a right justified numeric starting at 2 and increasing sequentially for each different document that is to be coordinated in that area.

Example:

343. PC 2/07891/2 (The second releasable J-12 document in the Pacific Command area for J-12 07891/2)

Data being submitted to NATO will be formatted as **CCCAA/nnnnn/nn** where the first one or three characters (C or CCC) is the ITU country code of the submitting nation (as listed in Annex C to Appendix A). Unused characters (CC) and alpha numerics four through six (AAA) are used as a subordinate organization designation determined by the submitting nation. US organizations will use the format **USAECn/nnnnn/nn** when equipment spectrum certification support data is submitted to NATO.

Prefix Definition

USAEC The first US J-12 document that is approved for release in the European area and it is going to NATO for a piece of equipment

USAEC3 The third US J-12 document that is approved for release in the European area to a NATO nation for a piece of equipment

Example:

343. USAEC2/ 00377 (The 2nd J-12 document approved for release in the European area to a NATO nation for a piece of equipment with J-12 number 00377.)

Off-the-Shelf Equipment.....344

6 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: *EQS

Description: Data Item 344 may be used in frequency bands 29.89-50.00, 150.8-174.0, 406.1-420.0 and 450-512 MHz for Land Mobile System (LMS) assignments. This data item may also be used in frequency bands 108.000-117.975 and 328.6-335.4 MHz for the following types of assignments: VOR1A, VOR1B, VOR2A, VOR2B, ILSLOC, or ILSGS.

Input Requirement: This data item is not used by DoD. Enter one of the following codes: LMS, VOR1A, VOR1B, VOR2A, VOR2B, ILSLOC, or ILSGS. This data item is not stored in the FRRS central database.

Example:

344. VOR1A

Radar Tunability.....345

2 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *EQT

Description: Data Item 345 is a coded entry describing the tuning capabilities of both pulsed and nonpulsed radars.

Input Requirement: For all radars, enter one of the following symbols:

FA - Frequency-agile radars that operate on various frequencies within a band, either specified or random mode

FV - Radars that operate on a discrete frequency determined by the characteristics of a fixed magnetron or similar radio frequency generating device

FX - Radars capable of operating on a single discrete frequency

TC - Radars capable of being tuned to any frequency within the requested band

T S - Radars capable of being tuned across the authorized or requested band in discrete steps or increments. This includes crystal control.

Example:
345. TC

Pulse Duration346

9 or 9-9 characters - 30 occurrences

Submitted to IRAC: yes GMF tag: *EQT following PD

Description: Data Item 346 indicates the width of the transmitted pulse (measured in microseconds or milliseconds at the half-power (3 dB) points) for all equipment using pulsed emission.

Input Requirement: For all stations using pulsed emissions, insert a numeric value(s) indicating the characteristic pulse duration(s) of the equipment at the half-power points. Pulse duration (PD) will be indicated in microseconds up to and including 999 microseconds and in milliseconds at one millisecond and above. Add the letter M at the end of the numeric value when expressed in milliseconds. Fractions may be shown to the nearest tenth by using a decimal. For equipment having a capability for continuously variable PDs over wide range(s), insert upper and lower numerical values separated by a dash.

Examples:

346. 1	(Inserts or changes the PD values of 1, 3, and 5.6
346/2. 3	microseconds for the first three values and inserts
346/3. 5.6	a 1 to 25 millisecond PD range for the fourth value.)
346/4. 1M-25M	

Pulse Repetition Rate347

9 or 9-9 characters - 30 occurrences

Submitted to IRAC: yes GMF tag: *PRR

Description: Data Item 347 indicates the number of pulses per second (PPS) for all equipment using pulsed emission.

Input Requirement: For all stations using pulsed emissions, enter the numeric value(s) for the pulse repetition rate(s) (PRRs) of the equipment. PRRs will be indicated in pulses per second (PPS) up to and including 999 PPS and in thousands of pulses per second at 1000 PPS and above, adding the letter K after the numeric value. For equipment having a capability for continuously variable PRRs over a wide range(s), insert upper and lower numerical values separated by a dash.

Examples:

347. 500	(Inserts the PRR values of 500, 750, and 1000 PPS
347/2. 750	for the first three entries and a 200 to 999 PPS
347/3. 1K	range for the fourth value.)
347/4. 200-999	

Intermediate Frequency348

11 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 348 provides the intermediate frequency (an image frequency at any given point in the tuning range) value resulting from a frequency conversion into a fixed, lower carrier (before demodulation).

Input Requirement: Data Item 348 is required for EUCOM assignments. It is optional for all others. Precede the intermediate frequency value with unit indicators as follows:

- K** - If frequency is less than 30 MHz
- M** - If frequency is at least 30 MHz, but less than 100 GHz
- G** - If frequency is at least 100 GHz, but less than 3 THz
- T** - If frequency is 3 THz or greater

Example:

348. M450

Sidelobe Suppression.....349

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 349 indicates whether a portion of the radiation from an antenna outside of the main beam and usually of much less intensity has been suppressed or eliminated. The suppression or elimination of unwanted signals or interference takes place by means of shielding, filtering, grounding, component relocation, or sometimes redesign of the equipment in use.

Input Requirement: Data Item 349 is required for EUCOM assignments. It is optional for all others. For Radar assignments enter one of the following codes:

- Y** - Sidelobe suppressed

N - Sidelobe not suppressed

Example:

349. Y

TRANSMITTER ANTENNA DATA

Transmitter antenna data consists of data items 354 through 374. When both fixed and mobile stations (FA/MA, FC/MS, etc.) are used, enter the fixed antenna data first.

Antenna Name354

10 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: part of XAD

Description: Data Item 354 is the generic name for the type of antenna normally associated with the transmitter.

Input Requirement: This data item is required for transmitter antennas at terrestrial stations, except experimental and mobile stations, that operate at 29890 kHz and above. If necessary, abbreviate to 10 characters. Entry not required if application is (a) below 29890 kHz, (b) space or earth station. Required for CENTCOM assignments.

Examples:

354. WHIP

354. PARABOLIC

Antenna Nomenclature355

18 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: *EQT following the \$ symbol

Description: Data Item 355 is the standard military nomenclature or commercial manufacturer's make and model number of the transmitter antennas.

Input Requirement: Data Item 355 is required except when it is part of a satellite transponder. Indicate antenna's nomenclature or commercial manufacturer's model number, but omit the model number if the antenna is part of a satellite transponder. If only a commercial model or nomenclature is known, enter the manufacturer's code (from Annex D to this appendix) followed by the antenna model number.

Examples:

355. AS102 (Inserts a government antenna nomenclature)

355. RCATVM000IA (Inserts an RCA Corporation commercial antenna nomenclature.)

Antenna Structure Height356

3 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 356 identifies the overall height (in meters) of the transmitter antenna support structure above ground level.

Input Requirement: Data Item 356 is required for EUCOM assignments. It is optional for all others. Enter in meters the overall height of the antenna structure above ground level. This entry is not applicable to Mobile services.

Example:

356. 17

Antenna Gain357

4 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: part of XAD: negative gains are in *EGN, *SGN

Description: Data Item 357 indicates the antenna gain, in decibels, with reference to an isotropic source (dBi) in the direction of maximum radiation.

Input Requirement: Enter the antenna gain (in dB with reference to an isotropic source) in the direction of maximum radiation. The gain may be omitted on applications for terrestrial stations below 29890 kHz if the gain is for other than fixed (FX) or aeronautical fixed (AX) stations in the 3000 to 29890 kHz band, or for terrestrial stations operating at 29890 kHz and above for experimental and mobile stations. For a negative gain (earth and space stations only), enter a dash before the value of the gain. Required for CENTCOM assignments.

Examples:

357. -10

357. 20

Antenna Elevation358

5 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: part of XAD

Description: Data Item 358 specifies the site's terrain elevation, in meters above mean sea level (AMSL), at the base of a fixed station's transmitter antenna. If the antenna is installed on a structure such as a tower or a building, the site elevation is specified as the ground elevation at the base of the structure.

Input Requirement: Data Item 358 is required except for applications for frequencies below 29890 kHz or for terrestrial stations operating at 29890 kHz and above if for experimental and mobile stations. Enter the site (terrain) elevation (at the base of the transmitting antenna structure) in meters AMSL.

Example:

358. 980

Antenna Feed Point Height359

5 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: Part of XAD

Description: Data Item 359 indicates the distance (in meters) between the transmitter antenna's feedpoint and the terrain.

Input Requirement: Data Item 359 is required except for applications for frequencies below 29890 kHz or for terrestrial stations operating at 29890 kHz and above if for experimental and mobile stations. Enter in meters, the antenna feed point height above the terrain. In the case where the antenna is mounted pointing vertically to a reflector on the same structure, enter the height of the reflector above ground.

Example:

359. 10 (a terrestrial antenna)

For airborne terminals, enter the maximum operational altitude of the aircraft in meters AMSL. (For aircraft stations communicating with terrestrial stations within the US&P also enter aircraft flight level **FL** information in data item 503 for use by the FAA.)

Example:

359. 10668 (An aircraft station at 35,000 feet)

Antenna Horizontal Beamwidth360

4 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: part of XAD, sometimes entered in *EBW, *SBW

Description: Data Item 360 describes the angular beamwidth (measured in degrees at the half-power (3 dB) points) of space, earth or terrestrial station antennas (including experimental) employing earth or space-station techniques.

Input Requirement: For space, earth, or terrestrial stations (including experimental) employing space or earth station techniques, enter the antenna beamwidth (in degrees) at the half-power (-3 dB) points. For a fractional beamwidth, add a zero before the decimal.

Examples:

360. 0.5

360. 12

360. 17.2

Antenna Vertical Beamwidth361

3 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 361 indicates the transmitter antenna vertical beamwidth, measured in degrees and normally taken as the angle between the half power points (-3 dB points) from the pattern of the antenna.

Input Requirement: Data Item 361 is required for EUCOM assignments. It is optional for all others. Enter the half-power vertical beamwidth in degrees, measured between the -3 dB points.

Example:

361. 23

Antenna Orientation362

3 or 3,3 or 3,3-3 or 3,3/3 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: XAZ, Enter in XAD when this is a space assignment.

Description: Data Item 362 describes the physical direction or movement of the transmitter antenna. A second entry indicating the azimuth angle of the antenna's main beam may also be given. This second entry, given in degrees clockwise from true north, applies only to earth stations or terrestrial stations employing earth-station techniques.

Input Requirement: This data item is required for all earth, space, and terrestrial stations.

a. **Terrestrial Antenna:** Enter the three-digit azimuth in degrees from true north or one of the codes listed below for the transmitter antenna.

Antenna Codes

- ND** - nondirectional
- R** - rotating through 360 degrees
- S** - fixed direction but steerable in the horizontal plane
- SSH** - scanning horizontally through a limited sector

- SSV** - vertical scanning (nodding)
- T** - tracking that can observe a moving object.

Examples:

362. 225

362. ND

b. **Earth Station:** Enter the antenna's minimum operating elevation in degrees consisting of V followed by a two-digit value. Follow the vertical data with a comma and the three-digit azimuth in degrees from true north to the geostationary satellite. For two geostationary satellites, enter the three-digit azimuth to each satellite, separated by a slant bar. For more than two nongeostationary satellites, enter the maximum range of the azimuth angle in three-digit values separated by a dash.

Examples:

362. V09,133

362. V10,132/150

362. V12,122-160

c. **Space Station:** Enter either NB for narrow beam or EC for earth coverage.

Example:

362. EC

Antenna Polarization363

1 character - 10 occurrences

Submitted to IRAC: yes GMF tag: XAP

Description: Data Item 363 is a one-character code indicating the polarization of the electromagnetic radiation from the antenna.

Input Requirement: Enter the polarization of the antenna using one of the following symbols:

Code	Polarization
A	Elliptic, left
B	Elliptic, right
D	Rotating
E	Elliptical
F	45-degrees
H	Fixed horizontal
J	Linear
L	Left-hand circular
M	Oblique, angled left
N	Oblique, angled right
O	Oblique, angled, crossed
R	Right-hand circular
S	Horizontal and vertical
T	Right and left-hand circular
V	Fixed vertical
X	Other or unknown

Data Item 363 is required for each transmitter antenna as described below:

- a. Assignments above 1000 MHz that must be coordinated (by the IRAC) with the Canadian Department of Communications.
- b. Assignments to earth or space stations or to terrestrial stations (including experimental stations) employing earth or space-station techniques.

c. Assignments to terrestrial stations at 420 MHz and above except for the optional cases shown below:

- (1) Experimental stations
- (2) Mobile stations
- (3) Meteorological aids in the 1660-1700 MHz band
- (4) TACAN/DME in the 960-1215 MHz band
- (5) Aeronautical telemetry in the 1435-1535, 2200-2290, or 2310-2390 MHz bands

Example:
363. V

JSC Area Code.....373

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: This is a one-character code computer-generated by the JSC from Data Item 300. It indicates a minor area of the world in which the transmitter is located and is used to reduce computer search time. The list of approved codes are listed in Annex E to this appendix.

Input Requirement: This is a JSC computer-generated output data item.

Example:
373. A

ITU Region374

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 374 is a single integer (1, 2, or 3) indicating an ITU-designated region of the world in which the transmitter is located.

Input Requirement: This data item is computer-generated by the JSC for ITU records only.

Example:
374. 2

RECEIVER LOCATION DATA

A maximum of 30 receiver locations are permitted in a frequency assignment record. Receiver location data consists of data items 400 through 408 . When multiple occurrences of receiver location data occur, the data entries must correspond in the same sequence throughout; that is,

proper alignment of multiple occurrence entries must be maintained so each specified data item will be associated with the correct receiver. Additionally, each set of equipment and antenna data must be associated with a particular occurrence of a receiver location site.

When more than one receiver location is involved, the corresponding information in the data items will be designated as R01 or R02, etc. For example, **401. TAMPA,R01 401. MIAMI,R02** indicates that receiver number one is in Tampa and receiver number two is in Miami. **Only one occurrence of each of the 400-408 series data items is permitted for a particular receiver location.**

State/Country.....400

4 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: RSC

Description: Data Item 400 is an authorized abbreviation for the state, country, or geographical area in which the receiving station is located. The approved list of abbreviations are listed in Annex C to this appendix.

Input Requirement: This data item is required. Enter the name or abbreviation of the state, country, or area in which the receiving antenna is located.

Example A:

400. NC

(a single or first occurrence for a receiver)

Example B:

400. TN,R01

(an example of two receivers)

400. SPCE,R02

Antenna Location401

24 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: RAL

Description: Data Item 401 is the name of the city, base, or geographical area of operation within which the receiving antenna is actually located.

Input Requirement: This data item is required. Enter the name of the city, base, or geographical area where the receiver antenna is located. Abbreviate the data entry if necessary; however, if an abbreviation is required, the entry should be spelled the same as that in the US Postal Zip Code Directory or applicable gazetteer. After a name has been entered the first time, all future entries for that same location should use the same spelling. If the receiver antenna location is the same as the entry in Data Item 400, the antenna location will be abbreviated using the same abbreviation entered in Data Item 400.

- a. In addition to the above, the following standard abbreviations will be used even if the entry is less than 24 characters.

Abbreviation	Location Word
ARPT	Airport
ARA	Army Area
CP	Camp
CY	City
CGD	Coast Guard District
CO	County
DI	District
DIV	Division
FT	Fort
IAP	International Airport
IS	Island(s)
LNB	Large Navigational Buoy
MT	Mont, Monte, Mount(s)
MTN	Mountain(s)
MAP	Municipal Airport
PG	Proving Ground(s)
PT	Point
ST	Saint

b. If the location name exceeds 24 characters after applying the standard abbreviation(s) listed in “a” above, and the entry has not been previously used, then shorten the entry to 24 characters and enter the full text in Data Item 801 for review by the assignment authority.

If an area of operation is involved, it may be described as a radius, in kilometers, extending from a given location. For example, if an assignment is for transmission anywhere within a 50-kilometer radius of Dallas, then insert DALLAS in this data item and the radius in Data Item 306 (Authorized Radius). An area of operation may also be described by geographical coordinates. For example, if an assignment is for one or more land mobile stations operating south of 33 degrees north in the state of Arizona, then insert AZ in this data item and the coordinate data in Data Item 530 (Authorized Areas).

An area of operation within several states may also be described in this data item as US or USA, with the included or excluded states being shown in Data Item 531 (Authorized States). Similarly, US&P may be used if the area includes a possession. For locations described as an area of operation, note that operations might not occur in every square mile of the area concerned and that the area described might overlap into states not shown in Data Item 300 (State/Country).

While the data inserted shall normally be geographical names or descriptions, exceptions may be made for experimental operations, mobile operations where the state/country and antenna location data items are identical (such as PAC PAC, etc.), and/or space operations. For an assignment to an experimental station, other than one in space, or to a mobile station having identical state/country and antenna location names, words such as AIRCRAFT, BALLOONS, or SHIPS may be used as appropriate. For an assignment to a station aboard a geostationary satellite, insert GEOSTATIONARY. For an assignment to a station aboard a nongeostationary satellite, insert

NONGEOSTATIONARY. For an assignment to a station located on a natural object in space, insert the name of the object, e.g., MOON.

Examples:

401. FT BRAGG

401. NASHVILLE,R05

401. NONGEOSTATIONARY

Receiver Control.....402

18 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: RRC (Only the first eight characters are sent to NTIA.)

Description: Data Item 402 is used to identify the operating unit that controls, either electrically or administratively, the receiver station when it is different from the data entered in Data Item 207. Data Item 402 is not used by the Air Force.

Input Requirement: Enter the operating unit or department (when it is different from the data entered in Data Item 207) that controls, whether administratively or electronically, the receiving station.

Example:

402. P.C.

Antenna Coordinates403

15 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: RLA, RLG

Description: Data Item 403 is the WGS 84 datum latitude and longitude (expressed in degrees, minutes, and seconds) of the receiver antenna location(s) entered in Data Item 401.

Input Requirement: Data Item 403 is required except when the site named in Data Item 401 is an area of operation for which coordinates cannot be applied and for nongeostationary satellites. Enter geographical coordinates (degrees, minutes, and seconds) for the antenna location. If the seconds are not known, insert 00 for the seconds, except in the case of the NAVAIDS, geostationary satellites, and microwave facilities where seconds are required. Use leading zeros as appropriate for degrees, minutes, or seconds. Degrees latitude require two digits; degrees longitude require three digits. Enter N or S for latitude and E or W for longitude. If *GEOSTATIONARY* has been entered in Data Item 401, enter the latitude as 000000N and the longitudinal position of the satellite (in degrees, minutes, and seconds east or west). Note, when older maps are used, the coordinates may vary as much as 300-400 meters from locations determined by using DoD standard WGS 84 datum maps or Global Positioning System (GPS) equipment. Organizations are encouraged to obtain GPS equipment to determine the position of fixed antennas.

Examples:

403. 422615N1263228W

403. 000000N0925300W

Call Sign404

10 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: ACL (Only the first eight characters are sent to NTIA.)

Description: Data Item 404 is the international call sign assigned to the receiving station. For navigational aids, this data item is used for the NAVAIDS identifier instead of a call sign.

Input Requirement: Data Item 404 is used for the international call sign assigned to the receiving station. Leave this data item blank if the call sign is either a local voice or tactical call sign, or if it is not applicable. For navigational aids, enter the NAVAIDS identifier.

Example:

404. WUH55

Authorized Radius.....406

4 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *RAD

Description: Data Item 406 defines the area of operation for portable, mobile, or transportable receiver stations. This area is expressed as a radius in kilometers extending from the coordinates listed in Data Item 403.

Input Requirement: If Data Item 306 is blank and the receiving station is portable, mobile, or transportable and a circular area is used to describe the area of operation, enter the radius (in kilometers from the coordinates entered in Data Item 403) to describe the area in which the receiving station will operate. (Note: When both fixed and mobile stations transmit on the same frequency, an entry in Data Item 406 indicates that the mobile station will be operating within the area described). For aircraft stations also enter radius data as part of Data Item 711.

Example:

406. 250

Path Length.....407

5 characters - 1 occurrence per receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 407 shows the distance (in kilometers) between the terrestrial transmitter and receiver stations.

Input Requirement: This is an optional data item. Enter the distance in kilometers between the transmitter and the receiver.

Example:

Repeater Indicator408

1 character - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *RPT

Description: Data Item 408 indicates if the receiver station is used primarily as a repeater. A direct coupling between the station's receiver and the station's transmitter allows the incoming signal to be retransmitted exactly as received.

Input Requirement: Input for Data Item 408 is applicable only between 29890 and 420 MHz. Enter the letter R for each receiver location when a station in the fixed or mobile service is used primarily as a repeater.

Example:

408. R,R02

SPACE STATIONS

A maximum of 30 space-station receiver stations are permitted in a frequency assignment record.

Data items 415 through 419 are to be used for unique space station data. Leave data items 415 through 419 blank for geostationary satellites.

Equatorial Inclination Angle.....415

4 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *ORB preceding IN

Description: Data Item 415 indicates the angle at which the nongeostationary receiving satellite's orbit crosses the equator. A nongeostationary satellite is defined as one whose circular orbit does not lie in the plane of the earth's equator and that has a specific equatorial inclination, apogee, and perigee.

Input Requirement: Enter equatorial inclination angle (degrees) for nongeostationary space receiver stations.

Example:

415. 34.7

Apogee416

5 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *ORB preceding AP

Description: Data Item 416 indicates the point in the orbit of a nongeostationary receiver satellite at which it is farthest from the earth.

Input Requirement: Enter apogee (in kilometers) for nongeostationary space receiver stations.

Example:
416. 23100

Perigee417

5 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *ORB preceding PE

Description: Data Item 417 indicates the point in the orbit of a nongeostationary receiver satellite at which it is nearest to the earth.

Input Requirement: Enter perigee (in kilometers) for nongeostationary space receiver stations.

Example :
417. 200

Period of Orbit.....418

7 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *ORB

Description: Data Item 418 indicates the time it takes for a nongeostationary receiver satellite to make one complete orbit.

Input Requirement: Enter period of orbit for nongeostationary space receiver stations. If the period of orbit it is less than 24 hours, enter the time in hours followed by the letter H. If the period is 24 hours or more, enter the number of days followed by the letter D.

Example:
418. 19.6H

Number of Satellites419

2 characters - 1 occurrence per receiver location

Submitted to IRAC: yes GMF tag: *ORB

Description: Data Item 419 indicates the number of nongeostationary receiving satellites in a system having similar orbital characteristics.

Input Requirement: Enter the number of nongeostationary satellites in the system.

Example:
419. 24

RECEIVER EQUIPMENT

A maximum of 30 receiver locations are permitted in a frequency assignment record. When both fixed and mobile stations (FA/MA, FC/MS, etc.,) are used in data items 440 through 443, enter the fixed receiver data first.

Equipment Nomenclature.....440

1,18 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: *EQR

Description: Data Item 440 is a two-part data item. The first part identifies the type of equipment (government, commercial, or unassigned), and the second part identifies either the standard military nomenclature or the commercial make and model number of the equipment at each specific receiver station location. If both a military nomenclature and a commercial model number are assigned to the same equipment, the military nomenclature will be used.

Input Requirement: This data item is required. Enter an equipment type code followed by the equipment system or component nomenclature for the receiver location. (Data items 440 and 443 are interrelated, and an entry in Data Item 440 should be accompanied by a corresponding entry in Data Item 443, if known and if it is different from the entries in data items 340 and 343.) If Data Item 443 is known, enter the nomenclature exactly as it is recorded in the SCS database or J-12 document, DD Form 1494. Enter one of the following codes:

G - Government nomenclature

C - Commercial model number

U - Unassigned nomenclature

After the equipment type code, enter a comma and then the nomenclature subject to the following:

- (1) For government equipment nomenclatures, enter the standard military nomenclature.

Example:

440/2. G,AN/ARC-121,R03 (The second receiver equipment at the third receiver location)

- (2) If only a commercial model number is available, indicate the manufacturer of the equipment using the manufacturer's codes listed in Annex D to this appendix, followed by the model number. If no manufacturer code exists, enter the full name of the manufacturer in Data Item 801.

- (3) If the nomenclature includes a modification, insert MOD and a number, if applicable, immediately following the nomenclature. For the word MARK, insert MK immediately following the nomenclature.

- (4) If the receiver does not have an assigned government nomenclature or commercial model number, enter the manufacturer's name and a brief description of the equipment in Data Item 801.

Example:

440. C,MOTH23FFN1130E (An equipment nomenclature at the first receiver location)

Rx Aircraft Nautical Mile Value.....442

4 characters - 1 occurrence per each receiver location

Submitted to IRAC: no GMF tag: *RAD

Description: Data Item 442 contains the receiver radius of aeronautical assignment group frequency area of operation in nautical miles and is generated from Data Item 406.

Input Requirement: This is an NTIA computer-generated output data item.

Example:

442. 200

Equipment Certification Identification Number443

15 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 443 indicates the certification number assigned to the receiver equipment or system by the MCEB J-12 Working Group.

Input Requirement: Enter the equipment J-12 certification number (DD Form 1494) if known.

The entry is formatted **CCCCCC/nnnnn/nn** where **CCCCCC** is six characters and can be a combination of spaces or characters, and the seventh position is always a slash “/”. The **nnnnn** is the numerical portion of the entry which designates the number assigned to the piece of equipment. All five digits must be filled. Use leading zeros when necessary. If there is more than one document for a particular piece of equipment, a revision number may be added to the basic number by adding either **/n** or **/nn**. (Data items 440 and 443 are interrelated, and an entry in Data Item 443 must be accompanied by a corresponding entry in Data Item 440.) Note: If an SCS database or a DD Form 1494 exists and is available, use it as the source from which to obtain the correct information to complete Item 440. Data will be formatted as follows:

Prefix	Definition
J/F 12	A US document that has not been approved for foreign release
AC	A US document approved for release in the Joint Forces Atlantic Command area
CC	A US document approved for release in the Central Command area
EC	A US document approved for release in the European Command area but not through NATO channels
PC	A US document approved for release in the Pacific Command area
SC	A US document approved for release in the Southern Command areas
DA	A US document approved for release direct to specific defense attaché office in a foreign nation
C/F299	A document approved for release to the CCEB nations (Australia, Canada, New Zealand, United Kingdom, and the United States of America)

Examples:

443. J/F 12/01234

(A non releasable US J-12 document)

443. PC /01234

(The first releasable J-12 document for a piece of equipment in the Pacific Command area.)

If more than one document is to be released for a piece of equipment in a specific area, the prefix may also contain a right justified numeric starting at 2 and increasing sequentially for each different document that is to be coordinated in that area

Example:

443. PC 2/07891/2

(The second releasable J-12 document in the Pacific Command area for J-12 07891/2)

Data being submitted to NATO will be formatted as **CCCAA/nnnnn/nn** where the first one or three characters (**C** or **CCC**) is the ITU country code of the submitting nation (as listed in Annex C to Appendix A). Unused characters (**CC**) and alpha numerics four through six (**AAA**) are used as a subordinate organization designation determined by the submitting nation. US organizations will use the format **USAECn/nnnnn/nn** when equipment spectrum certification support data is submitted to NATO.

Prefix	Definition
--------	------------

USAEC	The first US J-12 document that is approved for release in the European area and it is going to NATO for a piece of equipment
--------------	---

USAEC3	The third US J-12 document that is approved for release in the European area to a NATO nation for a piece of equipment
---------------	--

Example:

443. USAEC2/ 00377

(The 2nd J-12 document approved for release in the European area to a NATO nation for a piece of equipment with J-12 number 00377.)

RECEIVER ANTENNA DATA

A maximum of 30 receiver locations are permitted in a frequency assignment record. Receiver antenna data (consists of data items 454 through 463) is required for space and earth stations, fixed (point-to-point) and fixed station receivers or repeaters to which a mobile station transmits. (In other instances, the data entry is optional.)

Antenna Name454

10 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: part of RAD

Description: Data Item 454 is the generic name for the type of antenna.

Input Requirement: Enter the generic name for the type of the antenna. Data Item 454 is required for each receiver antenna for terrestrial stations, except experimental and mobile stations, that operate at 29890 kHz and above. If necessary, abbreviate the data entry to 10 characters. This entry not required if the application is (a) below 29890 kHz, (b) a space or earth-station, or (c) a mobile-to-mobile station.

Examples:

454. WHIP,R02

(Two antennas at the second receiver location)

454/2. DIPOLE,R02

Antenna Nomenclature455

18 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: *EQR following the \$ symbol

Description: Data Item 455 is the standard military nomenclature or commercial manufacturer's make and model number of the antenna.

Input Requirement: Data Item 455 is required except when it is part of a satellite transponder. Indicate antenna's military nomenclature or commercial manufacturer's model number. If only a commercial model or nomenclature is known, enter the manufacturer's code (from Annex C of this appendix) followed by the antenna model number.

Examples:

455. AS102

(Inserts a government antenna nomenclature)

455. RCATVM000IA

(Inserts RCA Corporation's commercial antenna nomenclature.)

Antenna Structure Height456

3 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 456 identifies the overall height in meters of the receiver antenna support structure above ground level.

Input Requirement: Data item 456 is required for EUCOM assignments. It is optional for all others. Enter, in meters, the overall height of the antenna structure above ground level. This entry not applicable to mobile services.

Example:

456. 17

Antenna Gain457

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: RAD; negative gains are in *SGN, *EGN

Description: Data Item 457 indicates the antenna gain in decibels with reference to an isotropic source (dBi) in the direction of maximum radiation.

Input Requirement: Enter the antenna gain (in dB with reference to an isotropic source) in the direction of maximum radiation. Gain may be omitted on applications for terrestrial stations below 29890 kHz if the gain is for other stations than fixed (FX) or aeronautical fixed (AX) stations in the 3000 to 29890 kHz band, or for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. For a negative gain (earth and space stations only), enter a dash before the value of gain.

Examples:

457. -27

457/1. 0,R02 (Gains for two antennas at the second receiver location)
457/2. 1,R02

Antenna Elevation458

5 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: part of RAD

Description: Data Item 458 specifies the site's terrain elevation, in meters AMSL, at the base of a fixed station's receiver antenna. If the antenna is installed on a structure such as a tower or a building, the site elevation is specified as the ground elevation at the base of the structure.

Input Requirement: Data Item 458 is required except for applications for frequencies for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. Enter the site (terrain) elevation in meters AMSL.

Example:

458. 11

Antenna Feed Point Height459

5 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: part of RAD

Description: Data Item 459 indicates the distance (in meters) between the receiver antenna's feedpoint and the terrain.

Input Requirement: Data Item 459 is required except for frequencies for applications below 29890 kHz, or for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. Enter in meters, the antenna feed-point height above the terrain. In the case where the antenna is mounted pointing vertically and the signal is received from a reflector on the same structure, enter the height of the reflector above ground. For airborne terminals, enter the maximum operational altitude of the aircraft in meters AMSL. (For aircraft stations communicating with terrestrial stations within the US&P also enter aircraft flight level **FL** information in data item 503 for use by the FAA.)

Examples:

459. 10668 (an aircraft antenna at 35,000 feet)
459. 10 (a terrestrial antenna)

Antenna Horizontal Beamwidth460

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: part of RAD, sometimes entered in *EBW, *SBW

Description: Data Item 460 describes the angular beamwidth (measured in degrees at the half-power (3 dB) points) of space, earth, or terrestrial stations antennas (including experimental) employing space or earth-station techniques.

Input Requirement: For space, earth, or terrestrial stations (including experimental) employing space or earth-station techniques, enter the antenna beamwidth (in degrees) at the half-power (-3 dB) points. For a fractional beamwidth, prefix the decimal with a zero. Data may be omitted for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations.

Examples:

460. 0.5
460. 12

Antenna Vertical Beamwidth461

3 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 461 indicates the receiver antenna vertical beamwidth, measured in degrees and normally taken as the angle between the half-power points (-3 dB points) from the pattern of the antenna.

Input Requirement: Data Item 461 is required for EUCOM assignments. It is optional for all others. Enter the half-power vertical beamwidth in degrees, measured between the -3 dB points.

Example:

461. 23

Antenna Orientation462

3 or 3,3 or 3,3-3 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: RAZ, Enter in RAD when this is a space
assignment.

Description: Data Item 462 describes the physical direction or movement of the receiver antenna. A second entry indicating the azimuth angle of the antenna's main beam may also be given. This second entry, given in degrees, clockwise from true north, applies only to earth stations or terrestrial stations employing earth station techniques.

Input Requirement: This data item is required for all earth, space, and terrestrial stations.

a. **Terrestrial Antenna:** Enter the three-digit azimuth in degrees from north or enter one of the antenna codes listed below for the receiving antenna:

- ND** - Nondirectional
- R** - Rotating through 360 degrees
- S** - Fixed direction steerable in the horizontal plane
- SSH** - Scanning horizontally through a limited sector
- SSV** - Vertical scanning (nodding)
- T** - Tracking to observe a moving object.

Examples:

462. 225

462. ND

b. **Earth Station:** Enter the antenna's minimum operating elevation, in degrees, consisting of a V followed by a two-digit value. Follow the vertical data with a comma and the three-digit azimuth, in degrees, from true north to the geostationary satellite. For nongeostationary satellites, or mobile or transportable stations communicating with geostationary satellites, enter the maximum range of the azimuth angle in three-digit values separated by a dash.

Examples:

462. V09,133

462. V12,122-160

c. **Space Station:** Enter either NB for narrow beam or EC for earth coverage.

Example:

462. EC

Antenna Polarization463

1 character - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: RAP

Description: Data Item 463 is a one-character code indicating the polarization of the electromagnetic radiation from the antenna.

Input Requirement: Data may be omitted for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. Enter polarization of the antenna using one of the following symbols:

Code	Polarization
A	Elliptical, left
B	Elliptical, right

D	Rotating
E	Elliptical
F	45-degree
H	Fixed horizontal
J	Linear
L	Left-hand circular
M	Oblique angled, left
N	Oblique angled, right
O	Oblique angled, crossed
R	Right-hand circular
S	Horizontal and vertical
T	Right and left circular
V	Fixed vertical
X	Other or unknown

Data Item 463 is required for each receiver antenna as described below:

a. Assignments above 1000 MHz that must be coordinated (by the IRAC) with the Canadian Department of Communications.

b. Assignments to earth or space stations or to terrestrial stations (including experimental stations) employing earth or space-station techniques.

c. Assignments to terrestrial stations at 420 MHz and above except for the optional cases shown below:

(1) Experimental stations

(2) Mobile stations

(3) Meteorological aids in the 1660-1700 MHz band

(4) TACAN/DME in the 960-1215 MHz band

(5) Aeronautical telemetry in the 1435-1535, 2200-2290, or 2310-2390 MHz bands

Example:

463. R

SPACE SYSTEMS

Data items 470 through 473 are to be used for unique space systems data.

Space Station Noise Temperature.....470

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 470 denotes the noise temperature of the receiving space stations.

Input Requirement: Data Item 470 is required only for a space station(s). Enter the space station noise temperature in degrees Kelvin.

Example:
470. 200,R02

Earth Station System Noise Temperature471

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 471 denotes the noise temperature of the receiving earth station(s).

Input Requirement: Data Item 471 is required only for a receiving earth station(s). Enter the earth-station system noise temperature in degrees Kelvin.

Example:
471. 60,R02

Equivalent Satellite Link Noise Temperature472

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 472 denotes the noise temperature at the input of the earth-station receiver corresponding to the radio-frequency noise power that produces the total observed noise at the output of the satellite link. This excludes noise due to

interference coming from satellite links using other satellites and from terrestrial systems.

Input Requirement: This entry is required for each earth station that receives signals from a geostationary space station using a simple frequency changing transponder. Enter noise temperature in degrees Kelvin, taking into consideration all satellite links received by the earth station on the frequency indicated.

Example:
472. 96,R03

JSC Area Code.....473

1 character - 1 occurrence per each receiver location

Submitted to IRAC: no GMF tag: None

Description: Data Item 473 indicates a minor area of the world in which the receiver is located and is used to reduce computer search time. The list of approved codes are listed in Annex E to this appendix.

Input Requirement: This one-character code is computer-generated by the JSC from Data Item 400.

Example:
473. A

SUPPLEMENTARY DETAILS

Data items 500 through 531 contain various coded or free-text remarks generally relating to the assignment as a whole or clarifying the authorized area of operations.

IRAC Notes500

4 characters - 10 occurrences³

Submitted to IRAC: yes GMF tag: NTS

Description: Data Item 500 is a 4-character code identifying the IRAC note(s) (less M notes) applicable to the frequency assignment. The five types of notes which may be entered in this data item are: C (coordination), E (emission), L (limitation), P (priority), and S (special). M (minute) notes are entered only in Data Item 501 (Notes--Free Text). A complete listing of IRAC notes is contained in Annex F to this appendix.

Input Requirement: Data Item 500 is used for US&P IRAC GMF assignments only. Data Item 500 is a four-character code identifying the IRAC note(s) (less M notes) applicable to the frequency assignment. Five types of notes may be entered in this data item: C (coordination), E (emission), L (limitation), P (priority), and S (special). M (minute) notes are entered only in Data Item 501 (Notes Free-Text Comments).

Examples:
500. L116
500/2. C002

Notes Free-Text Comments501

35 characters - 30 occurrences³

Submitted to IRAC: yes GMF tag: *NTS

Description: Data Item 501 is used to enter the M (minute) note(s) and complete the amplifying conditional comments as agreed to by the IRAC FAS. A complete listing of IRAC M notes is contained in Annex F to this appendix.

Input Requirement: For each M-note, include the M-note, a comma, and the associated amplifying text. Do not enter more than one M-note per data line.

Examples:

501. M003,WRCTV,WASHINGTON,DC

(a two-line entry)

501/2. M003,J SMITH (202) 841-5121

Description of Requirement502

1440 Characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 502 is used to record those agency remarks which, while pertinent to the assignment, are not intended to be part of the application processed through the IRAC. These remarks, therefore, will be excluded from the GMF.

Input Requirement: Data Item 502 is optional. Enter as many lines of remarks as necessary; however, precede each line with the data item identifier 502. Order of occurrence identifiers are not permitted, e.g., 502/2. Do not split words between lines, and do not exceed 77 characters per line (including the data item number, punctuation, and spaces). Do not duplicate data entered in data items 503/520. To modify existing data, delete the entire entry and replace it with new data as shown in the following example.

Example:

502. \$

502. THIS ASSIGNMENT PROVIDES TWO ADDITIONAL VOICE CHANNELS

502. DCS 77BB01 DURING CONTINGENCY SITUATIONS.

Agency Free-Text Comments503

35 characters - 30 occurrences³

Submitted to IRAC: yes GMF tag: *AGN

Description: Data Item 503 is used to record agency remarks in the applications processed through the IRAC. These remarks will, therefore, be included in the GMF. Remarks not intended for the GMF must be entered in Data Item 502 (Description of Requirement).

Input Requirement: Enter up to 35 characters per line and precede each line with the data item number. Remarks **not** intended for the IRAC should be entered in Data Item 502.

Example A:

503. ACME ELECTRONIC CORP TO SUPPORT IN

(Inserts four lines of
agency text)

503/2. DEVELOPMENT OF EXP TELECOMMAND

503/3. SYSTEM. FINAL TESTING TO BE HELD AT

503/4. EXP TEST FACILITY.

Example B:

503/2. DEV OF EXP TELECOMMAND AND TRACKING

(In Example A above, this action would replace the second line of agency text.)

Example C:

503/5. USAF AND USN SPONSORED. (Adds a line to Example A)

Flight levels are required for FAA coordination of frequency assignments within the US&P. Flight level data will be entered in hundreds (100s) of feet. The data entry will be formatted as: FL (followed by three digits). Leading zeros are required.

Examples:

503. FL160 (This means 16,000 feet.)

503. FL035 (This means 3,500 feet.)

FAS Agenda or OUS&P Comments504

72 characters - 5 occurrences³

Submitted to IRAC: yes GMF tag: FAS

Description: Data Item 504 contains information that is not required to be recorded in the GMF. The data entered will appear in the FAS Agenda Action File (ACTF) file and the FRRS permanent proposal records only. It will not appear in the GMF or FRRS central databases.

Input Requirement: Data Item 504 is used whenever it is necessary to provide information to the FAS members reviewing application agendas. Data Item 504 is **not** entered into the GMF or FRRS central databases.

Example A:

504. FIVE YEAR REVIEW UPDATE (A one-line example)

Example B:

504. THIS IS A RENEWAL OF AN EXISTING AUTHORIZATION

504/2. ASSIGNMENT INADVERTENTLY ALLOWED TO EXPIRE

(A two-line example)

NATO Pooled Frequency Code Number505

5 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 505 provides data on communications associated with ground transmitters/receivers as well as aircraft operating in the 225-400 MHz frequency band.

Input Requirement: Data Item 505 is required for EUCOM and JFCOM assignments. For air/ground/air and air to air requirements in the 225-400 MHz band, enter a Type Special Assignment code. Use of this data item is optional for all other bands.

Code Type Special Assignment

B - air/ground/air requirements

A - air to air requirements

P - air/ground/air pool requirement

Upon approval of EUCOM assignments only, the Frequency Management Sub-committee (FMSC) will assign, from the groupings below, a code number identifying the type and nationality of a frequency pool:

0001 - 0199	United States
0700 - 0999	Special Operations Pools
2000 - 2299	Command and Miscellaneous Pools

Example data input:

505. P

Example of data returned from FMSC:

505. P0803

Paired Frequency506

11,10,12 characters - 30 occurrences

Submitted to IRAC: yes GMF tag: *PRD

Description: Data Item 506 has three parts. The first part contains the repeater station transmit or receive frequency associated with the transmitter frequency described in this record. The second part contains the agency serial number associated with that paired frequency and the third part contains a brief associated comment.

Input Requirement: Data Item 506 is mandatory:

- (1) for assignments where the transmitter or a receiver is used primarily as part of a repeater in the frequency ranges 29.89 - 50 MHz (Government exclusive ranges), 138.00 – 144.00 MHz, 148.00 - 149.90 MHz, 150.05 - 150.80 MHz, 162.00 – 174.00 MHz, and 406.10 – 420.00 MHz
- (2) where SFAF Data Item 113 contains the suffix “R” added to the station class or
- (3) where SFAF Data Item 408 equals “R”.

Enter the transmitting or receiving frequency (in the format prescribed in data item 110, Frequency) of the repeater station paired with this record followed by a comma, the serial number (in the format prescribed in data item 102, Agency Serial Number) of the assignment record with the associated frequency followed by a comma, and one of the two following comments: If the paired frequency is a transmitting frequency, use “**RPT OUT**”. If the paired frequency is a receiving frequency, use “**RPT IN**”.

This data item is optional to describe any duplex operation, enter the frequency, serial number, and “**DUPX PAIRING**”. For frequency diversity operations, enter the frequency, serial number, and “**FREQ DIVRSTY**”.

a. For a first example using a simple repeater, assume Record AR 097123 is not for a repeater and it is paired with Record AR 097124, that represents a repeater station. In this instance record AR 097123 would have a 506 data entry that would indicate record AR 097124’s frequency, agency serial number, and the comment: RPT OUT. Using the same

example, record AR 097124 would have a 506 data entry that would indicate record AR 097123's frequency, agency serial number, and the comment: RPT IN.

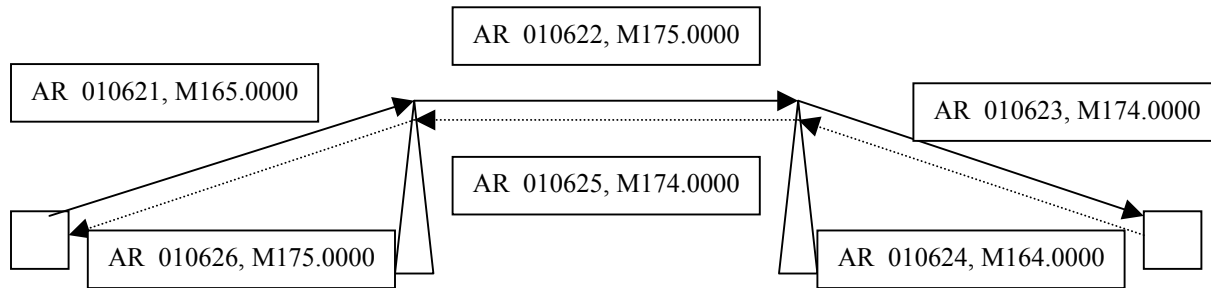
Examples:

506. M163.4375,AR 097124,RPT OUT (The AR 097123 record entry.)

506. M173.4375,AR 097123,RPT IN (The AR 097124 record entry.)

b. In a second more complex example using two repeaters (See diagram below), see how this data item is used to identify the record from which a repeating frequency is received, the record to which a repeating frequency is connected to, or a record that is duplex paired with a record in a repeating system.

MULTICAST REPEATER SYSTEM



Examples:

506. M175.0000,AR 010622,RPT OUT	(First entry for AR 010621)
506/2. M175.0000,AR 010626,DUPX PAIRING	(Second entry for AR 010621)
506. M165.0000,AR 010621,RPT IN	(First entry for AR 010622)
506/2. M174.0000,AR 010623,RPT OUT	(Second entry for AR 010622)
506/3. M174.0000,AR 010625,DUPX PAIRING	(Third entry for AR 010622)
506. M175.0000,AR 010622,RPT IN	(First entry for AR 010623)
506/2. M164.0000,AR 010624,DUPX PAIRING	(Second entry for AR 010623)
506. M174.0000,AR 010625,RPT OUT	(First entry for AR 010624)
506/2. M174.0000,AR 010623,DUPX PAIRING	(Second entry for AR 010624)
506. M164.0000,AR 010624,RPT IN	(First entry for AR 010625)
506/2. M175.0000,AR 010626,RPT OUT	(Second entry for AR 010625)
506/3. M175.0000,AR 010622,DUPX PAIRING	(Third entry for AR 010625)
506. M174.0000,AR 010625,RPT IN	(First entry for AR 010626)
506/2. M165.0000,AR 010621,DUPX PAIRING	(Second entry for AR 010626)

c. When using this data item to identify a duplex record e.g., those used in HF or microwave systems. The data required is the frequency of the paired record, a comma, the serial number of the paired record, a comma, and DUPX PAIRING.

Examples:

506. M8000,AF 010527,DUPX PAIRING
 506. M9000,AF 010528,DUPX PAIRING

FUNCTION IDENTIFIERS

The costs associated with the operational use of the spectrum are of increasing concern to the DoD. The function identifier fields permit the analysis of spectrum usage by major, intermediate, and detailed function identifiers. These fields are the replacement for SFAF Data Item 705, which has been deleted. The standardization of data entries in Data Items 511 and 512

are controlled at the MCEB level. Any suggested changes, additions, or deletions will be forwarded to the MCEB, SOPWG. These changes can be addressed via e-mail to frs@jsc.mil. Some data entries are standardized for Data Item 513 and are also controlled by the MCEB, SOPWG. However, COCOMs and MILDEPs may also set up any “**standard**” data entries to capture information about any function identifier not listed in the Detailed Function Identifier column in the table in Annex I to this appendix. Periodically, the MCEB SOPWG will review new “**standard**” entries to determine if they should be added to the MCEB standard lists.

Major Function Identifier 511

30 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *MFI

Description: Data Item 511 identifies the major (or primary) function of the frequency assignment.

Input Requirement: This entry is required in all DoD assignments. It may be used to eliminate entries in data items 503 (Free-text), 502 (Description of Requirement), and 520 (IRAC Supplementary Details) to reduce redundant database entries when the function and purpose of the assignment is adequately described in Data Items 511, 512, and 513. Select an entry from the approved standardized Major Function Identifier column in Annex I to this appendix. Each of the following examples are related in the same order to the examples in Data Items 512 and 513.

Examples:

511. AIR OPERATIONS

511. GROUND OPERATIONS

511. C3

Intermediate Function Identifier 512

30 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *IFI

Description: Data Item 512 identifies the intermediate function of the frequency assignment.

Input Requirement: This entry is required in all DoD assignments. It will be used to reflect those function identifiers that are subordinate to the Major Function Identifier listed in Data Item 511. Select an entry from the approved standardized Intermediate Function Identifier column in Annex I to this appendix. Each of the following examples are related in the same order to the examples in Data Items 511 and 513.

Examples:

512. AIR TRAFFIC CONTROL

512. INFANTRY

512. DATA LINK

Detailed Function Identifier 513

30 characters - 5 occurrences

Submitted to IRAC: yes GMF tag: *DFI

Description: Data Item 513 identifies the detailed function of the frequency assignment.

Input Requirement: This entry is required in all DoD assignments if the function identifier is listed in the Detailed Function Identifier column in the table in Annex I to this Appendix. If a new entry is needed, forward a request through the applicable COCOM or MILDEP to the MCEB FP SOPWG. New entries cannot be entered in this item until approved by the SOPWG. Each of the following examples are related in the same order to the examples in Data Items 511 and 512.

Examples:

513. GROUND CONTROL

513. AIRBORNE INFANTRY

513. TADIL-C

(An example with two Detailed Function Identifiers)

513/02. JTIDS/MIDS

Supplementary Details.....520

1080 characters - 1 occurrence³

Submitted to IRAC: yes GMF tag: SUP

Description: Data Item 520 includes the following data, if applicable, plus any additional amplifying information that would facilitate processing:

- a. Doppler shift, if a significant factor in the particular system
- b. A general description of the assignment requirement
(applies to experimental stations)
- c. Sounder justification
- d. Coordination data
- e. Refer to NTIA manual, Chapter 9, for further details.

Input Requirement: This is a free-text data item. This data item is required on several assignments, e.g., experimental stations, transportable receiving earth stations, frequency diversity, sounders, etc. Order of occurrence identifiers are **not** permitted, e.g., 520/2. To modify existing data, either delete the entire entry and replace it with new data as shown in Example A, or add new data to the existing text as shown in Example B. Additional details may be found in the NTIA Manual. Each line should be preceded by data item identifier 520. Do not split words between lines, and do not exceed 77 characters per line (including the data item number, punctuation, and spaces). Enter as many data lines as necessary to give a general description of the requirement, indicating specific use of the frequency(ies) or band(s).

Example A:

520. \$

520. COORDINATED WITH FAA AS0406

(The dollar sign deletes the existing entry, regardless of the number of lines, and permits new data to be added)

Example B:

520. COORDINATED WITH AF AND NAVY

(Inserts new entry or adds to existing entry for Renewal, or Modification type of transactions. See paragraph 3f(2) at the front of the document.)

Transition and Narrow Band Planning Data521

8,13 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *TRN

Description: Data Item 521 has two parts. Part one contains the date the assignment is planned to be transitioned to comply with narrowband transition plans (NTIA Manual sections 4.3.7A, 4.3.9, or 5.3.5.2) and part two will contain the new frequency if the assignment is to be moved to a new frequency to comply with NTIA Manual narrowband channel plans. The notation concerning the transition may be of two types, first the assignment will be modified to meet the narrow band requirements; however, the assignment will remain on the same frequency. In the second instance the assignment will be moved to a new frequency and the existing record deleted.

Input Requirement: Data Item 521 is required in all assignments in frequency bands 138-150.8 MHz, 162-174 MHz, and 406.1-420 MHz if the assignment data is not in compliance with the narrow band requirements of the NTIA Manual (sections 4.3.7A, 4.3.9, or 5.3.5.2) except as noted below. Enter data in accordance with the following:

- a. If Data Item 521 is to be used to note that a record will be modified on or about a planned date to comply with narrow band transitioning, enter the date in the format (YYYYMMDD). See example A.
- b. If the assignment is to be transitioned to a new frequency to comply with narrow banding, enter the date of the planned transition in the format YYYYMMDD followed by a comma and the new frequency in the format defined in data item 110, Frequency. See example B.
- c. If the assignment is to be transitioned to a new frequency to comply with narrow banding and the planned date to transition is unknown, enter a comma and the new frequency in the same format as defined in data item 110, Frequency. See example C. When the transition date becomes known the record shall be updated as specified in paragraph b above.

Exceptions*: The above standards do not apply to:

1. Military equipment used for tactical and/or training operations
2. FM wireless microphone systems whose mean output power does not exceed 0.1 watt
3. Equipment operating on channels designated for low power systems as set forth in Sections 4.3.8, 4.3.8a, 4.3.10, 4.3.10a, and 5.5.8 of the NTIA Manual
4. Existing equipment used for Command Destruct systems in the 406.1-420 MHz bands.

*Exception records must contain record note **S189** in Data Item 500.

Example A:

521. 20051231

(The assignment will be modified by

31 December 2005 to meet narrow
banding transition requirements.)

Example B:

521. 20041231,M167.2875

(The assignment will be transitioned to M167.2875
by 31 Dec 2004.)

Example C:

521. ,M412.7375

(The new transition frequency M412.7375 is
known; however, the planned date of the transition
is unknown.)

Authorized Areas.....530

3,35 characters - 30 occurrences

Submitted to IRAC: yes GMF tag: *ART, *ARR, *ARB

Description: Data Item 530 has two parts. Part one contains a 3-character coded data entry, and the second part describes geographical areas that cannot be described in data items 306/406 (Authorized Mileage Radius) or Data Item 531 (Authorized States).

Input Requirement: If the antenna location in Data Item 301 and/or Data Item 401 is the name of a state/country or USA, a part of a state/country or parts of several contiguous states/countries may be entered here (for a particular transmitter or receiver location. Do not enter data here if Data Item 531 is used). The following identifying codes are available:

ART - For transmitting in area shown

ARR - For receiving in area shown

ARB - For transmitting and receiving in area shown

For each entry, enter the identifying code followed by a comma and the data concerning the area, using state/country abbreviations as shown in Annex C to this appendix. Use the letter N for north, S for south, E for east, and W for west when describing areas by latitude and longitude. Separate data elements by a comma.

Examples:

530. ART,SW WY,NE UT,NW CO

530. ARR,S OF 33N

530. ART,S OF 40N, E OF 095W

Authorized States531

3,35 characters - 6 occurrences

Submitted to IRAC: yes GMF tag: *LST, *LSR, *LSB, *EST, *ESR, *ESB

Description: Data Item 531 for assignments within the US&P and is used to include or exclude states whenever the transmitter and/or receiver antenna location is specified as an area of operation within several states.

Input Requirement: If the antenna location in Data Item 301 and/or Data Item 401 is specified as US, USA, or US&P for an area of operation within several states, enter the states to be included or excluded (for a particular transmitter or receiver location, do not enter data here if Data Item 530 is used). Precede each line with the data item number. Order of occurrence identifiers are not permitted, e.g. 531/2. The following identifying codes are available:

- ESB** - For transmitting and receiving in all states except those listed
- ESR** - For receiving in all states except those listed
- EST** - For transmitting in all states except those listed
- LSB** - For transmitting and receiving in the states listed
- LSR** - For receiving in the states listed
- LST** - For transmitting in the states listed.

Precede each line with one of the above identifying codes and a comma. Separate entries with commas as shown in the example. Use state abbreviations as shown in Annex C to this appendix.

Example A:

531. LST,CA,OR,WA (a one-line data entry)

Example B:

531. EST,MD,VA,NC,SC,GA,FL,AL,TN,NY,PA (a two-line data entry)
531. EST,VT,MI,WI,MN

OTHER ASSIGNMENT IDENTIFIERS

Data items 701 through 716 are used to identify the major headquarters' Frequency Action Officer and miscellaneous reference numbers relating to the assignment coordination process. Some data items are used to code assignments as various types of functional groupings or provide additional technical data for certain aeronautical assignments.

Frequency Action Officer701

3 characters - 1 occurrence³

Submitted to IRAC: yes GMF tag: *AGN, FAO-

Description: Data Item 701 is a MILDEP code identifying the person or group responsible for the assignment. This item is not used if Data Item 010 equals A.

Input Requirement: This data item is required for Air Force assignments. It is optional for all others.

Examples:

701. 322

701. T04

Control/Request Number702

15 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *AGN, CNO-

Description: Data Item 702 is the control/request number that allows subordinate organizations to track specific frequency applications.

Input Requirement: Enter the organizational control number as directed by the responsible agency or COCOM.

Air Force MAJCOMs: Use the MAJCOM symbol followed by a space, the two-digit number for the year, a dash, and the annual sequential number.

Example:

702. ACC 81-007

Army Organizations in the Continental US (CONUS) Reporting to the Army

Communications-Electronics (C-E) Services Office: Use the two-digit-letter code for AFC or command, followed by the last digit of the current year and sequential four-digit annual number. Use leading zeros as needed.

Example:

702. AC81011

Navy Organizations: Enter the control/request number.

Example:

702. N-431-88

Europe: Use the EUCOM control number. Use leading zeros as needed.

Example:

702. USAREUR81-266

JFCOM Organizations: The Joint Frequency Management Office, Atlantic (JFMOLANT) will either assign the control/request number or provide guidance for creating a unique organizational numbering sequence.

NORTHCOM Organizations: The Joint Frequency Management Office, North (JFMO NORTH) will either assign the control/request number or provide guidance for creating a unique organizational numbering sequence.

Example:

702. NNC 2003-2001

Type of Service.....704

1 character - 1 occurrence

Submitted to IRAC: yes GMF tag: *AGN,TOS- (This tag is being phased out.)

Description: Data Item 704 is a code used to identify the type of service/circuit involved.

Input Requirement: Data Item 704 is required for EUCOM and JFCOM assignments. Enter the type of circuit code from the following list:

- S** - Simplex
- D** - Duplex
- H** - Semiduplex
- Z** - Simplex net
- T** - One directional transmission
- B** - Broadcast
- M** - Simultaneous broadcast
- N** - Radionavigation
- L** - Radiolocation
- R** - Reception only
- X** - Radiodetermination

Example:

704. N

PACOM Complement/FMSC Function Number707

8 characters - 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 707 identifies a family grouping of frequencies having a like or similar use in the PACOM area. It also identifies the function number(s) used by the Frequency Management Sub-Committee (FMSC) to specify the operational use of frequencies in the EUCOM area.

Input Requirement: PACOM - Enter the number used to identify a family grouping of frequencies that have a similar use. See Example A. EUCOM – Enter the function number(s) used by the FMSC to specify the operational use of frequencies. See Example B.

Example A:

707. 34120 (PACOM)

Example B:

707. 100 (EUCOM)

707/2. 101 (EUCOM – second occurrence)

Host Country Docket Number710

35 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 710 records the docket number assigned by the host (soil) country to the frequency authorization.

Input Requirement: Enter the docket/case if a number is assigned by the soil (host) country to the frequency authorization.

Examples:

710. F84-171 (GE)
710. 2AAZ0191 (FMSC)

Aeronautical Service Range and Height.....711

6 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 711 is the flight level and service radius of aeronautical navigational aids and air traffic control assignments for frequencies above 29,890 kHz and low frequency beacons.

Input Requirement: Provide the flight level and service range of all aeronautical navigational aids and air traffic control assignments for frequencies above 29890 kHz and for low-frequency beacons. Enter service range (in nautical miles) using three digits followed by flight level (in thousands of feet) using three digits. The example indicates a 250-nautical mile range at 50000 feet. **(This type of data is also entered in radius data items 306/406 for use by analysis models and 503 as a flight level, in hundreds of feet for use by FAA within the US&P.)**

Example:

711. 250050

Transmitter FMSC MRFL Number715

14 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 715 records the assignment serial number as registered in the FMSC Master Radio Frequency List (MRFL).

Input Requirement: Required in all assignments forwarded to NATO. Enter the transmitter FMSC MRFL serial number of the frequency assignment as recorded in the FMSC MRFL. The entry is formatted: **CCCSYYYYnnnnn** where:

CCC or C = ITU county code, e.g. "BEL" for Belgium or "G " for UK

S or SSS = one or three character sub-country code, nationally managed, padded with spaces as necessary, can contain any combination of letters, digits or spaces

YYYY = four digit calendar year

nnnnn = 5 digits sequential number starting at 1 every year.

Examples:

715. USAR199900371
715. G AF200001372

Usage Code.....716

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 716 is a coded entry denoting the usage and category of circuits.

Input Requirement: Data Item 716 is required for all DoD assignments. Enter one of the following codes:

- 1 - Wartime circuits are required to be operated or to be ready for operation in peacetime (terminals are to be fully equipped with the appropriate installation and personnel).
- 2 - Wartime circuits that have a limited capability in peacetime for exchanging traffic between the planned terminals (equipment and personnel are shared with other Usage Code 2 circuits).
- 3 - Required for wartime only (equipment is, or will be, available).
- 4 - Required for occasional and temporary usage for training exercises or maneuver purposes.
- 5 - Required for the deployment phase of contingency operations.
- 6 - Required for the employment phase of contingency operations.
- 7 - Required for peacetime only.

Example:

716. 3

ADDITIONAL INFORMATION

In this data category, only data items 803 through 804 and 901 through 953 will be stored in the database record.

Coordination Data/Remarks.....801

60 characters 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 801 indicates the agencies with which coordination has been effected and contains any other free text remarks appropriate for processing the assignment.

Input Requirement: List agencies with which coordination has been effected (e.g., FAA, GAFC, etc.) and include any remarks that may be appropriate for processing the assignment.

Data Item 801 is not stored in the FRRS central database. Order of occurrence identifiers are not permitted, e.g. 801/2.

Example:

801. GAFC 021200Z AUG 82

Requestor Data.....803

60 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 803 reflects the name and DSN number of the individual submitting the request.

Input Requirement: This data item is required. Provide name and telephone number of individual submitting request.

Example:

803. BROWN, 281-3824

Tuning Range/Tuning Increments804

60 characters - 30 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 804 indicates the tuning range and the tuning increments of the equipment used on this record.

Input Requirement: Data Item 804 is required for EUCOM and CENTCOM assignments. It is optional for all others. Enter the tuning range of the equipment. Enter units followed by the lower-and upper-frequency of the equipment. Separate frequencies with a dash. Also enter one of the following to indicate the largest tuning increment of the frequency(ies) listed in Data Item 110. Separate entries with a comma. Order of occurrence identifiers are not permitted, e.g. 804/2.

TUNING INCREMENTS

CONTINUOUSLY TUNABLE

10 HZ

100 HZ (.1 KHZ)

500 HZ (.5 KHZ)

1 KHZ

5 KHZ

10 KHZ

12.5 KHZ

20 KHZ

25 KHZ

50 KHZ

75 KHZ

100 KHZ

125 KHZ

200 KHZ

250 KHZ

500 KHZ

1 MHZ (1000 kHz)

CRYSTAL (not tunable)

OTHER (explain with text)

Example:

804. M250-300, 100 KHZ

Date Response Required.....805

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 805 is the date by which either an assignment or nonassignment of requested frequencies is required to provide notifications to potential users.

Input Requirement: Data Item 805 is required only for frequency proposals to be processed within the European theater. It is optional for all others. Except in an unusual circumstance, this date should be at least 65 days from the date of the message release or initial request date. Enter the date as YYYYMMDD. Data Item 805 is not stored in the FRRS central database.

Example:

805. 19820315

Indication if Host Nominations Are Acceptable806

60 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 806 indicates the user's acceptance or rejection of host-nation nominations for substitute frequencies entered in Data Item 110.

Input Requirement: Data Item 806 is required for EUCOM assignments. It is optional for all others. Enter YES followed by a statement indicating band limitations and channelization requirements if host nation nominations are acceptable to fulfill the requirement. Enter NO followed by the reason why if other nominated frequencies cannot be used. Data Item 806 is not stored in the FRRS central database. Order of occurrence identifiers are not permitted, e.g. 806/2.

Example:

806. YES, BAND LIMITATIONS ARE...

Frequencies to be Deleted.....807

60 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 807 lists the frequency(ies) that can be deleted upon assignment of the requested frequencies, the host docket numbers or GE case numbers and MRFL numbers when available.

Input Requirement: Data Item 807 is required only on frequency proposals to be processed within the European theater. List the frequencies that can be deleted upon assignment of the

requested frequencies along with EUCOM Frequency Management Field Office Brussels, Belgium and/or GE case numbers and MRFL numbers when available. Leave this data item blank if no frequencies will be deleted. Data Item 807 is not stored in the FRRS central database. Order of occurrence identifiers are not permitted, e.g. 807/2.

Examples:

807. K14.5,USAREUR-81-266,
807. F61-836,131101

Record Status.....901

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 901 provides the status of an assignment in the master database.

Input Requirement: This data item is used by DoD only. Enter one of the following codes:

A - Active or **I** – Inactive

Example:

901. A

Proposal Status.....903

4 characters - 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 903 indicates the current (and previous statuses for historical purposes) of each CCF proposal. This data item is used in conjunction with Data Item 904.

Input Requirement: For use by JSC only. Not stored on SPECTRUM XXI Servers and clients. See Annex H for a list of standardized CCF codes. (For informational purposes, Annex H contains the list of status codes used in the SPECTRUM XXI “STATUS” field on SPECTRUM XXI server and client computers.)

Example:

903. NTIA

(The JSC has sent the proposal to NTIA.)

Status Date904

8 characters - 20 occurrences

Submitted to IRAC: no GMF tag: None

Description: Data Item 904 indicates the date automatically entered as YYYYMMDD for a "Proposal Status" (Data Item 903). This date changes as the action/status of the proposal changes within the processing cycle.

Input Requirement: This is a computer-generated date entered as YYYYMMDD. It is automatically entered whenever the “Proposal Status” is changed in CCF software. In SPECTRUM XXI software, the data must be manually entered.

Example:

904. 19951231

Proposal Date-Time-Group.....905

14 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 905 is the DTG on an AUTODIN message. (This data item is used in conjunction with Data Item 906.)

Input Requirement: This data item is used by DoD only. Data Item 905 is retrieved automatically entered whenever the “Proposal Status” is changed in CCF software. For use by JSC only. Not stored on SPECTRUM XXI Servers and clients.

Example:

905. 100800ZFEB96

Originator906

66 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 906 describes the originator of the proposal as noted in the FM line of an AUTODIN message. (This data item is used in conjunction with Data Item 905.)

Input Requirement: This data item is used by DoD only. It is automatically entered from the FM (originator) line of an AUTODIN (Defense Message System) proposal message.

Example:

906. HQ ACC LANGLEY AFB VA

Validation Status.....907

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 907 indicates the proposal's validation status.

Input Requirement: Data Item 907 is a computer-generated DCF or SPECTRUM XXI software data item. The following codes are used:

- Y** - - Record passed validation.
- N** - - Record did not pass validation.
- O** - - Record did not pass validation and the lack of validation was overridden.

(Blank) - Not validated.

Example:

907. Y

Exercise Project.....910

20 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 910 provides the Project or Exercise name.

Input Requirement: This data item is required in CENTCOM assignments and optional in all others.

Example:

910. GUARDRAIL

Date of Last Transaction911

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 911 provides the date the record was last modified by a database transaction. This data item changes whenever any aspect of a record is changed such as when administrative, modification or delete transaction is posted to the central database master record.

Input Requirement: This data item is computer-generated as YYYYMMDD by the JSC central database computer.

Example:

911. 19920212

Data Source Indicator.....924

4 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 924 is used to identify the source or organization from which the data record was received:

FMSC	- FMSC/MRFL data from NATO
CAN	- Industry Canada
FCC	- Federal Communications Commission
FRRS	- Frequency Resource Record System
GMF	- Government Master File
ITU	- International Telecommunication Union
RA	- Radio Astronomy data from the National Research Council

Input Requirement: Data Item 924 is a JSC computer-generated output data item.

Example:

924. ITU

Semi-Bandwidth926

12 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 926 represents, in kilohertz, half of the emission bandwidth of the largest bandwidth given for the assignment.

Input Requirement: Data Item 926 is a JSC computer-generated output data item.

Example:

926. 50

Date of Entry927

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 927 is the date (YYYYMMDD) the assignment was initially entered into the FRRS database system.

Input Requirement: Data Item 927 is a JSC computer-generated output data item.

Example:

927. 19951230

Date of Receipt928

8 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: This is the Date (YYYYMMDD) of receipt of the most recent transaction at the JSC.

Input Requirement: Data Item 928 is a JSC computer-generated output data item.

Example:

928. 19951229

PC ID950

10 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

Description: Data Item 950 identifies the PC at which the transaction was originated. Normally, this occurs at organizational levels below where the serial number can be assigned.

Input Requirement: Input to this data item is required whenever there is no serial number in the record, and this input will normally be formatted as ACCCYNNNN where:

ACCC = Up to four (4) characters, numerics or spaces unique to each PC. The assignment of these unique characters to a particular PC will be managed by the COCOM or MILDEP having jurisdiction over the area/organization submitting PC-originated proposals.

The first character “A” is coded from the table below:

A - Army organizations within CONUS
N - Navy organizations within CONUS
F - Air Force organizations within CONUS
P - Organizations in the PACOM area
L - Organizations in the JFCOM area
E - Organizations in the EUCOM area
S - Organizations in the SOUTHCOM area
C - Organizations in the CENTCOM area

The next three characters “CCC” are uniquely assigned by the COCOM or MILDEP.

YY = Last two digits of the calendar year

NNNN = Individual unique number assigned to each proposal

Example:

950. L4MD920001

IRAC Security Classification952

1 character - 1 occurrence

Submitted to IRAC: yes GMF tag: CLA

Description: Data Item 952 is the classification of the GMF record that is maintained by NTIA.

Input Requirement: Data Item 952 is computer-generated for DoD organizations. It is only used internal to the JSC for administrative record management only.

U - UNCLASSIFIED

C - CONFIDENTIAL

Example:

952. C

IRAC Declassification Date.....953

10 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: CDD

Description: Data Item 953 is the declassification date (DEYYYYMMDD) of a GMF record.

Input Requirement: Data Item 953 is computer-generated for DoD organizations. It is only used internal to the JSC for administrative record management.

Example:

953. DE19951230

Agency Action Number956

10 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: ACN

Description: Data Item 956 is a data entry used to track transactions. It is formatted with 4 characters (AAAA) selected by the submitting organization, followed by a two digit year (YY) and a four digit sequential number (nnnn).

Input Requirement: Data Item 956 is optional and assigned by the user entering the transaction into the system.

Example:

956. J 970001

Review Year957

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: RYR

Description: Data Item 957 contains the year (in the format YYYY) that the assignment was originally entered into the GMF or last modified in the GMF.

Input Requirement: Data Item 957 is used by non-DoD organizations. This field is used ONLY when no other changes are required (i.e., all parameters as listed are up-to-date), and it is necessary to indicate a review of an assignment has been completed. This data item is not stored in the FRRS central database.

Example:

957. 1997

Routine Agenda Item958

1 character - 1 occurrence

Submitted to IRAC: yes GMF tag: RTN

Description: Data Item 958 is a coded data entry that indicates the type of NTIA FAS agenda on which the application will be processed.

Input Requirement: Data Item 958 is computer-generated by NTIA for its internal processing of frequency assignment applications. It is an output data item only.

R - Routine Application
(Blank) - Regular Application
A - AAG Application
M - MAG Application

Example:

958. M

Circuit Remarks959

40 characters - 30 occurrences

Submitted to IRAC: yes GMF tag: REM

Description: Data Item 959 is used by NTIA to record any additional data to be submitted by the applicant that can not be accommodated in any of the other GMF data items. Upon approval of the record by NTIA, the circuit remarks stored in the GMF are also stored in the FRRS central database, the distributed databases, and SPECTRUM XXI databases for future reference. The data is also parsed and stored in the appropriate individual data items.

Input Requirement: Data Item 959 is computer-generated from 36 individual data items when the record is sent to NTIA.

Examples:

959. REM01 *ARB,39N43N098W099W

959. REM03 *ART,3915N4320N10016W1012W

FCC File Number963

22 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: *FLN

Description: Data Item 963 is an FCC-assigned file number, issued to non-government stations operating on government frequencies or government stations operating on nongovernment frequencies, which is unique to each FCC license.

Input Requirement: Data Item 963 is an output data item computer-generated by the FCC. This data item is not stored in the FRRS central database.

Example:

963. SES-LIC-20020611-00939

TX Aircraft Altitude964

3 characters - 10 occurrence

Submitted to IRAC: no GMF tag: XAD for airborne satellite terminals

Description: Data item 964 contains the maximum operational altitude of an aircraft with a transmitter earth station aboard it. The entry will be in thousands of feet.

Input Requirement: Data Item 964 is computer-generated by the SPECTRUM XXI PC. It is converted from the entry in Data Item 359. This data item is not stored in the FRRS central database.

Example:

964. 3 (for 3,000 feet)

RX Aircraft Altitude.....965

3 characters - 10 occurrences

Submitted to IRAC: no GMF tag: RAD for airborne satellite terminals

Description: Data Item 965 contains the maximum operational altitude of an aircraft with a receiver earth station aboard it. The entry will be in thousands of feet.

Input Requirement: Data Item 965 is computer-generated by the SPECTRUM XXI PC. It is converted from the entry in Data Item 459. This data item is not stored in the FRRS central database.

Example:

965. 50 (for 50,000 feet)

JCEOI RELATED ITEMS

SFAF data item numbers 982-999 are used to support the integration of standard spectrum management software and the new Joint Communications-Electronics Operation Instruction (JCEOI) software, Joint Automated CEOI System (JACS). Data items 982 through 998 are interrelated in that an entry in any of the data items is related to an entry in any of the other data items. Not all items have to be filled to complete the information needed for a net in the JCEOI Master Net List.

JCEOI Line Number.....982

5 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 982 is the line number associated with a JCEOI master net list entry.

Input Requirement: None. This is a JACS computer-generated output data item.

Examples:

982. 00001

982. 01373

JCEOI Master Net List Name.....983

16 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 983 is the name entered in the JCEOI Master Net List in JACS. This is a required item for the JCEOI.

Input Requirement: Enter the name of the net the assigned frequency will support. Revised Battlefield Electronics CEOI System / Revised DTD (Data Transmission Device) Software (RBECS/RDS) will only support 16 characters. Common Tier Three (CT3) will only support 15 characters and will truncate the last character.

Examples:

983. COCOM1

983. JTF17

983. 3BDE CMD

Net Frequency Range.....984

11-11 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 984 is the frequency range within which the JACS software must select a frequency for the net listed in data item 983, JCEOI Master Net List Name.

Input Requirement: This is a required item for the JCEOI. (The format is the same as SFAF data item 110 frequency band (11-11) entries.) Enter the frequency band from which the net operating frequency will be selected by the JACS software.

Examples:

984. K3000-29999

984. M30-79.975

984. M88000-G110

Joint Restricted Frequency List (JRFL) Protection Code985

1 or 1/2 (1 slash 2) characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 985 may have two elements. The first element contains the JRFL protection code that is applicable to the frequency assigned to this net. The first data element is followed by a slant bar and a locally assigned priority code. (Note when this data item is blank the frequency assigned to this net will not be included in the JRFL.

Input Requirement: If the frequency assigned to this net is to be included in the JRFL, enter the protection code from the list below that was requested for the corresponding master net list entry. If required, then enter a slash followed by the assigned priority code.

T - Taboo. Safety of life, stop buzzer, etc. If priorities are used, Taboo should always be A1.

G - Guarded. Frequencies with interest to the Intelligence sections.

P - Protected. Frequencies that have importance to the operation, but may be jammed because of geographic or time separation.

The locally assigned priority code consists of a letter followed by a number in the range A1 through Z9, with A1 being the highest.

Examples:

985. T

985. G/F2

985. P/A4

Net Tactical Call Word.....986

15 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 986 is the tactical call word assigned to the net. A tactical call word is defined as a pronounceable word which identifies a communications facility, a command, an authority, an activity, or a unit.

Input Requirement: Enter a Y if requesting a tactical call word, or enter the call word if a specific word is requested. The word assigned by JACS may not be the same as requested.

Examples:

986. Y

986. ALL AMERICAN

986. EAGLE

Net Tactical Call Sign.....987

3 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 987 is the tactical call sign assigned to the net. A call sign is defined as any combination of alphanumeric characters or phonetically pronounceable characters (trigraph), which identifies a communications facility, a command, an authority, an activity or unit; used primarily for establishing and maintaining communications.

Input Requirement: Enter a Y if requesting a tactical call sign. The call sign will be assigned by JACS, if requested.

Example:

987. Y

Net Tactical Air Designator (TAD).....988

5 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 988 is the TAD assigned to the net. A tactical air designator is a series of alphanumeric characters which can be used to identify frequencies and nets. These designators are usually listed in the Air Tasking Order (ATO) to prevent inadvertent disclosure of classified information.

Input Requirement: Enter the TAD, if known.

Examples:

988. 3

988. 115

Net Color Word.....989

16 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 989 is the Color Word assigned to the net. A tactical color word is a series of alpha characters which can be used to identify frequencies and nets. These words are usually listed in the Air Tasking Order (ATO) to prevent inadvertent disclosure of classified information.

Input Requirement: Enter the Color Word, if known. This item must contain information if data is entered in Data Item 990 Color Number.

Examples:

989. BLUE

989. ORANGE

Net Color Number.....990

2 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 990 contains a two digit Color Number assigned to the net. These numbers are usually listed in the Air Tasking Order (ATO) to prevent inadvertent disclosure of classified information.

Input Requirement: Enter the Color Number, if known. A leading zero is required for numbers less than ten. This data item must contain information if data is entered in data item 989 Color Word.

Examples:

990. 22
990. 03

Net Restoral Priority.....991

3 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 991 is the restoral priority assigned to the net. The first character identifies the type of network, and the second and third numbers prioritize the net within that type of network. This priority will be established by the JTF commander.

Input Requirement: Enter the restoral priority of the net, if any.

Examples:

991. H15
991. A01

Net Push Number.....992

3 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 992 is the Push Number assigned to the net. A push number is a series of alphanumeric characters assigned to a frequency to assist the aircrew in moving to an alternate frequency.

Input Requirement: Enter the Push Number of the net, if any.

Examples:

992. 15
992. 123

Band Usage.....993

1 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 993 is the Band Usage of the net, if required. This character defines the frequency band label the net uses.

Input Requirement: Enter the corresponding Band Usage of the net, if required.

H – Hertz
K – KiloHertz
M - MegaHertz

Examples:

993. K

993. M

Check Sum.....994

1 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 994 is the check sum for the frequency. The frequency check sum is the units digit of the number derived from adding together the individual digits in the frequency. For example, the check sum for M235.625 would be 3 ($2+3+5+6+2+5=23$).

Input Requirement: None. This is a JACS computer-generated output data item.

Examples:

994. 3

994. 8

COMSEC Keymat.....995

15 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 995 contains the short title of the communications security (COMSEC) keying materiel (Keymat) that is used for the net.

Input Requirement: Enter the COMSEC Keymat for the net, if required.

Examples:

995. USKAT 619

995. USKAT 3120

Circuit Type, Line Item, Group Category.....996

8 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 996 contains the Circuit Type (first two alpha characters), Line Item (next three digits), and Group Category (last three alphanumeric positions).

Input Requirement: Enter the Circuit Type, Line Item, and Group Category for the net, if required.

Examples:

996. AO164ZA1

996. ED253HO3

JCEOI Special Net Instructions.....997

63 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 997 contains any special instructions applicable to the net.

Input Requirement: Enter any applicable special instructions pertaining to the net listed in data item 983, JCEOI Master Net List Name.

Examples:

997. AOR WIDE SAR EXERCISE OPERATIONS
997. SPECINST
997. RESTORAL

Net Notes.....998

3 characters – 1 occurrence

Submitted to IRAC: no

Description: Data Item 998 contains the Net Notes associated with any Special Instructions (SPECINST).

Input Requirement: Enter the corresponding abbreviation for the SPECINST, if required. If this data item is to be used, Data Item 997 must contain SPECINST.

Examples:

998. Y11
998. AA1

Guard Requirements.....999

20 characters – 50 occurrences

Submitted to IRAC: no

Description: Data Item 999 is a listing of organizations required to guard (monitor) the net.

Input Requirement: Enter organizations required to guard this net, if any.

Examples:

999. JTF CMD CTR
999/2. MARFOR CMD CTR
999/3. AFFOR CMD CTR
999/4. G-NMZ,TR,CV8

ANNEX A - LIST OF STATION CLASSES WITH DEFINITIONS

(alphabetical by classes)

1. The following list of station class codes are authorized for use in Data Item 113. Where a definition is followed by the parenthetical expression "(RR)," it is an indication that the definition is in the ITU Radio Regulations.

2. The suffix "R" shall be added to the established class of station (STC) symbol only if the station is to be used primarily as a repeater in the bands:

29.89-50.00 MHz (exclusive government bands).
138.00-144.00 MHz.
148.00-149.90 MHz.
150.05-150.80 MHz.
162.00-174.00 MHz.
406.10-420.00 MHz.

For this purpose, a repeater consists of a radio transmitter, a radio receiver and coupling between the two so as to retransmit unchanged in intelligence the received signal.

3. The following definitions of Stations and associated Station Class (STC-see Section 9.8.2, Para. 15a. through 15-c.) symbols are used on U.S. government frequency assignments as applicable.

FAB--Aeronautical Broadcast Station: An aeronautical station which makes scheduled broadcasts of meteorological information and notices to airmen. (In certain instances, an aeronautical broadcast station may be placed on board a ship.)

TB--Aeronautical Earth Station: An earth station in the fixed-satellite service or in some cases in the aeronautical mobile-satellite service located at a specified fixed point on land to provide a feeder link for the aeronautical mobile-satellite service. (RR)

AX--Aeronautical Fixed Station: A station in the aeronautical fixed service. (RR)

ALA--Aeronautical Marker Beacon Station: A radionavigation land station in the aeronautical radio-navigation service which employs a marker beacon.

EJ--Aeronautical Mobile-Satellite Space Station: A space station in the aeronautical mobile-satellite service. (RR)

ALC--Aeronautical Radar Beacon (racon) Station: A land station in the aeronautical radionavigation service which employs a radar beacon (racon).

ALB--Aeronautical Radiobeacon Station: A radiobeacon station in the aeronautical radionavigation service intended for the benefit of aircraft.

AL--Aeronautical Radionavigation Land Station: A land station in the aeronautical radionavigation service not intended for use while in motion.

AM--Aeronautical Radionavigation Mobile Station: A mobile station in the aeronautical radionavigation service intended to be used while in motion or during halts at unspecified points.

TZ--Aeronautical Radionavigation-Satellite Earth Station: A fixed earth station in the aeronautical radio-navigation-satellite service.

TO--Aeronautical Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the aeronautical radionavigation-satellite service. (RR)

EO--Aeronautical Radionavigation-Satellite Space Station: A space station in the aeronautical radionavigation-satellite service. (RR)

FA--Aeronautical Station: A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea. (RR)

FG--Aeronautical Station (OR): An aeronautical station in the aeronautical mobile (OR) service. (RR)

FD--Aeronautical Station (R): An aeronautical station in the aeronautical mobile (R) service. (RR)

FLEA--Aeronautical Telemetry Land Station: A telemetry land station used in the flight testing of manned or unmanned aircraft, missiles, or major components thereof.

MOEA--Aeronautical Telemetry Mobile Station: A telemetry mobile station used for transmitting data directly related to the airborne testing of the vehicle. (or major components), on which the station is installed.

FLU--Aeronautical Utility Land Station: A land station located at airdrome control towers and used for control of ground vehicles and aircraft on the ground at airdromes.

MOU--Aeronautical Utility Mobile Station: A mobile station used for communication at airdromes with the aeronautical utility land station, the airdrome control station, the FAA flight service station, ground vehicles, and aircraft on the ground. (All transmissions shall be subject to the control of the airdrome control station and shall be discontinued immediately when so requested by the airdrome control operators.)

TJ--Aircraft Earth Station: A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft. (RR)

MA--Aircraft Station: A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft. (RR)

FAC--Airdrome Control Station: An aeronautical station providing communication between an airdrome control tower and aircraft.

AMA--Altimeter Station: A radionavigation mobile station in the aeronautical radionavigation service which employs a radio altimeter.

TY--Base Earth Station: An earth station in the fixed-satellite service or in some cases in the land mobile-satellite service located at a specified fixed point or within a specified area on land to provide a feeder link for the land mobile-satellite service. (RR)

FB--Base Station: A land station in the land mobile service. (RR)

EB--Broadcasting-Satellite Space Station (sound broadcasting): A space station in the broadcasting-satellite service (sound broadcasting). (RR)

EV--Broadcasting-Satellite Space Station (television): A space station in the broadcasting-satellite service (television). (RR)

BC--Broadcasting Station (sound): A station (sound) in the broadcasting service. (RR)

BT--Broadcasting Station (television): A station (television) in the broadcasting service. (RR)

TI--Coast Earth Station: An earth station in the fixed-satellite service or in some cases in the maritime mobile-satellite service located at a specified fixed point on land to provide a feeder link for the maritime mobile-satellite service. (RR)

FC--Coast Station: A land station in the maritime mobile service. (RR)

DGP--Differential-Global-Positioning-System (DGPS) Station: a terrestrial station used for the transmission of differential correction information to DGPS receivers aboard aircraft for navigation.

TW--Earth Exploration-Satellite Earth Station: An earth station in the Earth exploration-satellite service. (RR)

EW--Earth Exploration-Satellite Space Station: A space station in the Earth exploration-satellite service. (RR)

TP--Earth Station (receiving): An earth station used for receiving. (RR) (TP is not used on applications.)

XM--Experimental Composite Station: An experimental station used in experimental operations of a complex nature not readily specified or used in operation which is a composite of two or more of the established experimental categories.

XC--Experimental Contract Developmental Station: An experimental station used for the evaluation or testing under Government contract of electronics equipment or systems in a design or development stage.

XD--Experimental Developmental Station: An experimental station used for evaluation or testing of electronics equipment or systems in a design or development stage.

XE--Experimental Export Station: An experimental station intended for export and used for the evaluation or testing of electronics equipment or systems in the design or development stage.

XR--Experimental Research Station: An experimental station used in basic studies concerning scientific investigations looking toward the improvement of the art of radiocommunications.

EX--Experimental Station: A station utilizing radio waves in experiments with a view to the development of science or technique. This definition does not include amateur stations. (RR) (EX is not used on applications.)

XT--Experimental Testing Station: An experimental station used for the evaluation or testing of electronics equipment or systems, including site selection and transmission path surveys, which have been developed for operational use.

TC--Fixed-Satellite Earth Station: An earth station in the fixed-satellite service. (RR)

EC--Fixed-Satellite Space Station: A space station in the fixed-satellite service. (RR)

FX--Fixed Station: A station in the fixed service. (RR)

FLEB--Flight Telemetry Land Station: A telemetry land station the emissions of which are used for telemetry to a balloon; to a booster or rocket, excluding a booster or rocket in orbit about the Earth or in deep space; or to an aircraft, excluding a station used in the flight testing of an aircraft.

MOEB--Flight Telemetry Mobile Station: A telemetry mobile station used for transmitting data from an airborne vehicle, excluding data related to airborne testing of the vehicle itself, (or major components thereof).

FAT--Flight Test Station: An aeronautical station used for the transmission of essential communications in connection with the testing of aircraft or major components of aircraft.

ALG--Glide Path (Slope) Station: A radionavigation land station which provides vertical guidance to aircraft during approach to landing.

FXH--Hydrologic and Meteorological Fixed Station: A fixed station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

FLH--Hydrologic and Meteorological Land Station: A land station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

MOH--Hydrologic and Meteorological Mobile Station: A mobile station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

ES--Inter-Satellite Space Station: A space station in the inter-satellite service. (RR)

VA--Land Earth Station: An earth station in the fixed-satellite service or in some cases in the mobile-satellite service located at a specified point or within a specified area on land to provide a feeder link for the mobile-satellite service. (RR)

TU--Land Mobile Earth Station: A mobile earth station in the land mobile-satellite service capable of surface movement within the geographical limits of a country or continent. (RR)

EU--Land Mobile-Satellite Space Station: A space station in the land mobile-satellite service. (RR)

ML--Land Mobile Station: A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent. (RR)

FL--Land Station: A station in the mobile service not intended to be used while in motion. (RR)

ALL--Localizer Station: A radionavigation land station in the aeronautical radionavigation service which employs an Instrument Landing System Localizer.

RNL--Loran Station: A long distance radionavigation land station transmitting synchronized pulses. Hyperbolic lines of position are determined by the measurement of the difference in the time of arrival of these pulses.

FCB--Marine Broadcast Station: A coast station which makes scheduled broadcasts of time, meteorological, and hydrographic information.

NLC--Maritime Radar Beacon (racon) Station: A land station in the maritime radionavigation service which employs a radar beacon (racon).

NLM--Maritime Radiobeacon Station: A radiobeacon station in the maritime radionavigation service intended for the benefit of ships.

EG--Maritime Mobile-Satellite Space Station: A space station in the maritime mobile-satellite service. (RR)

NL--Maritime Radionavigation Land Station: A land station in the Maritime radionavigation Service not intended for use while in motion.

TX--Maritime Radionavigation-Satellite Earth Station: A fixed earth station in the maritime radionavigation-satellite service. (RR)

TQ--Maritime Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the maritime radionavigation-satellite service. (RR)

EQ--Maritime Radionavigation-Satellite Space Station: A space station in the maritime radionavigation-satellite service. (RR)

SM--Meteorological Aids Base Station: A land station in the meteorological aids service not intended for use while in motion.

SA--Meteorological Aids Mobile Station: A mobile station in the meteorological aids service intended to be used while in motion or during halts at unspecified points.

SMD--Meteorological Radar Station: A station in the meteorological aids service employing radar.

TM--Meteorological-Satellite Earth Station: An earth station in the meteorological-satellite service. (RR)

EM--Meteorological-Satellite Space Station: A space station in the meteorological-satellite service. (RR)

UA--Mobile Earth Station: An earth station in the mobile-satellite service intended to be used while in motion or during halts at unspecified points. (RR)

EI--Mobile-Satellite Space Station: A space station in the mobile-satellite service. (RR)

MO--Mobile Station: A station in the mobile service intended to be used while in motion or during halts at unspecified points. (RR)

OE--Oceanographic Data Interrogating Station: A station in the maritime mobile service the emissions of which are used to initiate, modify or terminate functions of equipment directly associated with an oceanographic data station, including the station itself.

OD--Oceanographic Data Station: A station in the maritime mobile service located on a ship, buoy, or other sensor platform the emissions of which are used for transmission of oceanographic data.

ALO--Omnidirectional Range Station: A radionavigation land station in the aeronautical radionavigation service providing direct indication of the bearing (omnibearing) of that station from an aircraft.

MAP--Portable Aircraft Station: A portable station operating in the aeronautical mobile service.

MLP--Portable Land Mobile Station: A portable station operating in the land mobile service.

MOP--Portable Mobile Station: A portable station operating in the mobile service.

MRP--Portable Radiolocation Station: A portable station operating in the radiolocation service.

MSP--Portable Ship Station: A portable station operating in the maritime mobile service.

FP--Port Station: A coast station in the port operations service.(RR)

SMB--Radar Beacon Precipitation Gage Station: A transponder station in the meteorological aids service, the emissions of which are used for telemetering.

RA--Radio Astronomy Station: A station in the radio astronomy service. (RR) (This is always a receiving station.)

MOB--Radio Beacon Mobile Station: A mobile station the emissions of which are used to determine its location.

TF--Radiodetermination-Satellite Earth Station: A fixed earth station in the radiodetermination-satellite service. (RR)

TL--Radiodetermination-Satellite Mobile Earth Station: A mobile earth station in the radiodetermination-satellite service. (RR)

EF--Radiodetermination-Satellite Space Station: A space station in the radiodetermination-satellite service. (RR)

RG--Radio Direction-Finding Station: A radiodetermination station using radio direction-finding. (RR)

LR--Radiolocation Land Station: A station in the radiolocation service not intended to be used while in motion. (RR)

MR--Radiolocation Mobile Station: A station in the radiolocation service intended to be used while in motion or during halts at unspecified points. (RR)

RN--Radionavigation Land Station: A station in the radionavigation service not intended to be used in motion. (RR)

ALTM--Radionavigation Land Test Station (Maintenance Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit maintenance testing by aircraft radio service personnel.

ALTO--Radionavigation Land Test Station (Operational Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit the pilot to check a radionavigation system aboard the aircraft prior to takeoff.

NR--Radionavigation Mobile Station: A station in the radionavigation service intended to be used while in motion or during halts at unspecified points. (RR)

TN--Radionavigation-Satellite Fixed Earth Station: A fixed earth station in the radionavigation-satellite service. (RR)

UM--Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the radionavigation-satellite service. (RR)

EN--Radionavigation-Satellite Space Station: A space station in the radionavigation-satellite service. (RR)

ALR--Radio Range Station: A radionavigation land station in the aeronautical radionavigation service providing radial equisignal zones. (In certain instances a radio range station may be placed on board a ship.)

SAR--Radiosonde Station: A station in the meteorological aids service employing a radiosonde.

SMRG--Radiosonde Ground Station: A station in the meteorological aids service employing a ground station associated with a radiosonde.

TE--Satellite EPIRB Station: A satellite Emergency Position-Indicating Radio Beacon (EPIRB) in the mobile-satellite service. (RR)

TG--Ship Earth Station: A mobile earth station in the maritime mobile-satellite service located on board ship. (RR)

MS--Ship Station: A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station. (RR)

SN--Sounder Network Station: A station equipped with an ionosphere sounder used for the real-time selection of frequencies for operational communication circuits.

SP--Sounder Prediction Station: A station equipped with an ionosphere sounder for real-time monitoring of upper atmosphere phenomena or to obtain data for the prediction of propagation conditions.

TT--Space Operation Earth Station: An earth station in the space operation service. (RR)

ET--Space Operation Space Station: A space station in the space operation service. (RR)

TH--Space Research Earth Station: An earth station in the space research service. (RR)

EH--Space Research Space Station: A space station in the space research service.

ME--Space Station: A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere. (RR) (ME is not used on applications.)

TD--Space Telecommand Earth Station: An earth station the emissions of which are used for space telecommand.

ED--Space Telecommand Space Station: A space station which receives emissions used for space telecommand.

TR--Space Telemetry Earth Station: An earth station which receives emissions used for space telemetering.

ER--Space Telemetry Space Station: A space station the emissions of which are used for space telemetering.

TK--Space Tracking Earth Station: An earth station which transmits or receives emissions used for space tracking.

EK--Space Tracking Space Station: A space station which transmits or receives and retransmits emissions used for space tracking.

SS--Standard Frequency and Time Signal Station: A station in the standard frequency and time signal service. (RR)

EE--Standard Frequency Satellite Space Station: A space station in the standard frequency satellite service. (RR)

FLEC--Surface Telemetry Land Station: A telemetry land station the emissions of which are intended to be received on the surface of the Earth.

MOEC--Surface Telemetry Mobile Station: A telemetry mobile station located on the surface of the Earth and the emissions of which are intended to be received on the surface of the Earth.

ALS--Surveillance Radar Station: A radionavigation land station in the aeronautical radionavigation service employing radar to display the presence of aircraft within its range. (In certain instances, a surveillance radar station may be placed on board a ship.)

FAD--Telecommand Aeronautical Station: A land station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

MAD--Telecommand Aircraft Station: A mobile station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

FBD--Telecommand Base Station: A land station in the land mobile service the emissions of which are used for terrestrial telecommand.

FCD--Telecommand Coast Station: A land station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

FXD--Telecommand Fixed Station: A fixed station in the fixed service the emissions of which are used for terrestrial telecommand.

FLD--Telecommand Land Station: A land station in the mobile service the emissions of which are used for terrestrial telecommand.

MLD--Telecommand Land Mobile Station: A mobile station in the land mobile service the emissions of which are used for terrestrial telecommand.

MOD--Telecommand Mobile Station: A mobile station in the mobile service the emissions of which are used for terrestrial telecommand.

MSD--Telecommand Ship Station: A mobile station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

FXE--Telemetry Fixed Station: A fixed station the emissions of which are used for telemetering.

FLE--Telemetry Land Station: A land station the emissions of which are used for telemetering.

MOE--Telemetry Mobile Station: A mobile station the emissions of which are used for telemetering.

Stations (alphabetical by symbols)

1. Where a definition is followed by the parenthetical expression "(RR)," it is an indication that the definition is in the ITU Radio Regulations.

2. The suffix AR" shall be added to the established class of station (STC) symbol only if the station is to be used primarily as a repeater in the bands:

29.89-50.00 MHz (exclusive government bands).
138.00-144.00 MHz.
148.00-149.90 MHz.
150.05-150.80 MHz.
162.00-174.00 MHz.
406.10-420.00 MHz.

For this purpose, a repeater consists of a radio transmitter, a radio receiver and coupling between the two so as to retransmit unchanged in intelligence the received signal.

3. The following definitions of Stations and associated Station Class (STC) (see Section 9.8.2, paragraph 15a through 15c) symbols are used on U.S. government frequency assignments as applicable.

AL--Aeronautical Radionavigation Land Station: A land station in the aeronautical radionavigation service not intended for use while in motion.

ALA--Aeronautical Marker Beacon Station: A radionavigation land station in the aeronautical radionavigation service which employs a marker beacon.

ALB--Aeronautical Radiobeacon Station: A radiobeacon station in the aeronautical radionavigation service intended for the benefit of aircraft.

ALC--Aeronautical Radar Beacon (racon) Station: A land station in the aeronautical radionavigation service which employs a radar beacon (racon).

ALG--Glide Path (Slope) Station: A radionavigation land station which provides vertical guidance to aircraft during approach to landing.

ALL--Localizer Station: A radionavigation land station in the aeronautical radionavigation service which employs an Instrument Landing System Localizer.

ALO--Omnidirectional Range Station: A radionavigation land station in the aeronautical radionavigation service providing direct indication of the bearing (omnibearing) of that station from an aircraft.

ALR--Radio Range Station: A radionavigation land station in the aeronautical radionavigation service providing radial equisignal zones. (In certain instances a radio range station may be placed on board a ship.)

ALS--Surveillance Radar Station: A radionavigation land station in the aeronautical radionavigation service employing radar to display the presence of aircraft within its range. (In certain instances, a surveillance radar station may be placed on board a ship.)

ALTM--Radionavigation Land Test Station (Maintenance Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit maintenance testing by aircraft radio service personnel.

ALTO--Radionavigation Land Test Station (Operational Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit the pilot to check a radionavigation system aboard the aircraft prior to takeoff.

AM--Aeronautical Radionavigation Mobile Station: A mobile station in the aeronautical radionavigation service intended to be used while in motion or during halts at unspecified points.

AMA--Altimeter Station: A radionavigation mobile station in the aeronautical radionavigation service which employs a radio altimeter.

AX--Aeronautical Fixed Station: A station in the aeronautical fixed service. (RR)

BC--Broadcasting Station (sound): A station (sound) in the broadcasting service. (RR)

BT--Broadcasting Station (television): A station (television) in the broadcasting service. (RR)

EB--Broadcasting-Satellite Space Station (sound broadcasting): A space station in the broadcasting-satellite service (sound broadcasting). (RR)

DGP--Differential-Global-Positioning-System (DGPS) Station: a terrestrial station used for the transmission of differential correction information to DGPS receivers aboard aircraft for navigation.

EC--Fixed-Satellite Space Station: A space station in the fixed-satellite service. (RR)

ED--Space Telecommand Space Station: A space station which receives emissions used for space telecommand. (RR)

EE--Standard Frequency Satellite Space Station: A space station in the standard frequency satellite service. (RR)

EF--Radiodetermination-Satellite Space Station: A space station in the radiodetermination-satellite service. (RR)

EG--Maritime Mobile-Satellite Space Station: A space station in the maritime mobile-satellite service. (RR)

EH--Space Research Space Station: A space station in the space research service. (RR)

EI--Mobile-Satellite Space Station: A space station in the mobile-satellite service. (RR)

EJ--Aeronautical Mobile-Satellite Space Station: A space station in the aeronautical mobile-satellite service. (RR)

EK--Space Tracking Space Station: A space station which transmits or receives and retransmits emissions used for space tracking.

EM--Meteorological-Satellite Space Station: A space station in the meteorological-satellite service. (RR)

EN--Radionavigation-Satellite Space Station: A space station in the radionavigation-satellite service. (RR)

EO--Aeronautical Radionavigation-Satellite Space Station: A space station in the aeronautical radionavigation-satellite service. (RR)

EQ--Maritime Radionavigation-Satellite Space Station: A space station in the maritime radionavigation-satellite service. (RR)

ER--Space Telemetry Space Station: A space station the emissions of which are used for space telemetry.

ES--Inter-Satellite Space Station: A space station in the inter-satellite service. (RR)

ET--Space Operation Space Station: A space station in the space operation service. (RR)

EU--Land Mobile-Satellite Space Station: A space station in the land mobile-satellite service. (RR)

EV--Broadcasting-Satellite Space Station (television): A space station in the broadcasting-satellite service (television). (RR)

EW--Earth Exploration-Satellite Space Station: A space station in the Earth exploration-satellite service. (RR)

EX--Experimental Station: A station utilizing radio waves in experiments with a view to development of science or technique. (RR) (EX is not used on applications.)

FA--Aeronautical Station: A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example on board ship or on a platform at sea. (RR)

FAB--Aeronautical Broadcast Station: An aeronautical station which makes scheduled broadcasts of meteorological information and notices to airmen. (In certain instances, an aeronautical broadcast station may be placed on board a ship.)

FAC--Airdrome Control Station: An aeronautical station providing communication between an airdrome control tower and aircraft.

FAD--Telecommand Aeronautical Station: A land station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

FAT--Flight Test Station: An aeronautical station used for the transmission of essential communications in connection with the testing of aircraft or major components of aircraft.

FB--Base Station: A land station in the land mobile service. (RR)

FBD--Telecommand Base Station: A land station in the land mobile service the emissions of which are used for terrestrial telecommand.

FC--Coast Station: A land station in the maritime mobile service. (RR)

FCB--Marine Broadcast Station: A coast station which makes scheduled broadcast of time, meteorological, and hydrographic information.

FCD--Telecommand Coast Station: A land station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

FD--Aeronautical Station (R): An aeronautical station in the aeronautical mobile (R) service. (RR)

FG--Aeronautical Station (OR): An aeronautical station in the aeronautical mobile (OR) service. (RR)

FL--Land Station: A station in the mobile service not intended to be used while in motion. (RR)

FLD--Telecommand Land Station: A land station in the mobile service the emissions of which are used for terrestrial telecommand.

FLE--Telemetry Land Station: A land station the emissions of which are used for telemetry.

FLEA--Aeronautical Telemetry Land Station: A telemetry land station used in the flight testing of manned or unmanned aircraft, missiles, or major components thereof.

FLEB--Flight Telemetry Land Station: A telemetry land station the emissions of which are used for telemetry to a balloon; to a booster or rocket, excluding a booster or rocket in orbit about the Earth or in deep space; or to an aircraft, excluding a station used in the flight testing of an aircraft.

FLEC--Surface Telemetry Land Station: A telemetry land station the emissions of which are intended to be received on the surface of the Earth.

FLH--Hydrologic and Meteorological Land Station: A land station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

FLU--Aeronautical Utility Land Station: A land station located at airdrome control towers and used for control of ground vehicles and aircraft on the ground at airdromes.

FP--Port Station: A coast station in the port operations service. (RR)

FX--Fixed Station: A station in the fixed service. (RR)

FXD--Telecommand Fixed Station: A fixed station in the fixed service the emissions of which are used for terrestrial telecommand.

FXE--Telemetry Fixed Station: A fixed station the emissions of which are used for telemetry.

FXH--Hydrologic and Meteorological Fixed Station: A fixed station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

LR--Radiolocation Land Station: A station in the radiolocation service not intended to be used while in motion. (RR)

MA--Aircraft Station: A mobile station in the aeronautical mobile service other than a survival craft station, located on board an aircraft. (RR)

MAD--Telecommand Aircraft Station: A mobile station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

MAP--Portable Aircraft Station: A portable station operating in the aeronautical mobile service.

ME--Space Station: A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere. (RR) (ME is not used on applications.)

ML--Land Mobile Station: A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent. (RR)

MLD--Telecommand Land Mobile Station: A mobile station in the land mobile service the emissions of which are used for terrestrial telecommand.

MLP--Portable Land Mobile Station: A portable station operating in the land mobile service.

MO--Mobile Station: A station in the mobile service intended to be used while in motion or during halts at unspecified points. (RR)

MOB--Radio Beacon Mobile Station: A mobile station the emissions of which are used to determine its location.

MOD--Telecommand Mobile Station: A mobile station in the mobile service the emissions of which are used for terrestrial telecommand.

MOE--Telemetry Mobile Station: A mobile station the emissions of which are used for telemetry.

MOEA--Aeronautical Telemetry Mobile Station: A telemetry mobile station used for transmitting data directly related to the airborne testing of the vehicle, (or major components), on which the station is installed.

MOEB--Flight Telemetry Mobile Station: A telemetry mobile station used for transmitting data from an airborne vehicle, excluding data related to airborne testing of the vehicle itself, (or major components thereof).

MOEC--Surface Telemetry Mobile Station: A telemetry mobile station located on the surface of the Earth and the emissions of which are intended to be received on the surface of the Earth.

MOH--Hydrologic and Meteorological Mobile Station: A mobile station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

MOP--Portable Mobile Station: A portable station operating in the mobile service.

MOU--Aeronautical Utility Mobile Station: A mobile station used for communication at airdromes with the aeronautical utility land station, the airdrome control station, the FAA flight service station, ground vehicles, and aircraft on the ground. (All transmissions shall be subject to the control of the airdrome control station and shall be discontinued immediately when so requested by the airdrome control operators.)

MR--Radiolocation Mobile Station: A station in the radiolocation service intended to be used while in motion or during halts at unspecified points. (RR)

MRP--Portable Radiolocation Station: A portable station operating in the radiolocation service.

MS--Ship Station: A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station. (RR)

MSD--Telecommand Ship Station: A mobile station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

MSP--Portable Ship Station: A portable station operating in the maritime mobile service.

NL--Maritime Radionavigation Land Station: A land station in the Maritime Radionavigation Service not intended for use while in motion.

NLC--Maritime Radar Beacon (racon) Station: A land station in the maritime radionavigation service which employs a radar beacon (racon).

NLM--Marine Radiobeacon Station: A radiobeacon station in the maritime radionavigation service intended for the benefit of ships.

NR--Radionavigation Mobile Station: A station in the radionavigation service intended to be used while in motion or during halts at unspecified points. (RR)

OD--Oceanographic Data Station: A station in the maritime mobile service located on a ship, buoy or other sensor platform the emissions of which are used for the transmission of oceanographic data.

OE--Oceanographic Data Interrogating Station: A station in the maritime mobile service the emissions of which are used to initiate, modify, or terminate functions of equipment directly associated with an oceanographic data station, including the station itself.

RA--Radio Astronomy Station: A station in the radio astronomy service. (RR) (This is always a receiving station.)

RG--Radio Direction-Finding Station: A radiodetermination station using radio direction-finding. (RR)

RN--Radionavigation Land Station: A station in the radionavigation service not intended to be used in motion. (RR)

RNL--Loran Station: A long distance radionavigation land station transmitting synchronized pulses. Hyperbolic lines of position are determined by the measurement of the difference in the time of arrival of these pulses.

SA--Meteorological Aids Mobile Station: A mobile station in the meteorological aids service intended to be used while in motion or during halts at unspecified points.

SAR--Radiosonde Station: A station in the meteorological aids service employing a radiosonde.

SM--Meteorological Aids Base Station: A land station in the meteorological aids service not intended for use while in motion.

SMB--Radar Beacon Precipitation Gage Station: A transponder station in the meteorological aids service, the emissions of which are used for telemetering.

SMD--Meteorological Radar Station: A station in the meteorological aids service employing radar.

SMRG--Radiosonde Ground Station: A station in the meteorological aids service employing a ground station associated with a radiosonde.

SN--Sounder Network Station: A station equipped with an ionosphere sounder used for the real-time selection of frequencies for operational communication circuits.

SP--Sounder Prediction Station: A station equipped with an ionosphere sounder for real-time monitoring of upper atmosphere phenomena or to obtain data for the prediction of propagation conditions.

SS--Standard Frequency and Time Signal Station: A station in the standard frequency and time signal service. (RR)

TB--Aeronautical Earth Station: An earth station in the fixed-satellite service or in some cases in the aeronautical mobile-satellite service located at a specified fixed point on land to provide a feeder link for the aeronautical mobile-satellite service. (RR)

TC--Fixed-Satellite Earth Station: An earth station in the fixed-satellite service. (RR)

TD--Space Telecommand Earth Station: An earth station the emissions of which are used for space telecommand.

TE--Satellite EPIRB Station: A satellite Emergency Position-Indicating Radio Beacon (EPIRB) in the mobile-satellite service (RR).

TF--Radiodetermination-Satellite Earth Station: A fixed earth station in the radiodetermination-satellite service. (RR)

TG--Ship Earth Station: A mobile earth station in the maritime mobile-satellite service located on board ship. (RR)

TH--Space Research Earth Station: An earth station in the space research service. (RR)

TI--Coast Earth Station: An earth station in the fixed-satellite service or in some cases in the maritime mobile-satellite service located at a specified fixed point on land to provide a feeder link for the maritime mobile-satellite. (RR)

TJ--Aircraft Earth Station: A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft. (RR)

TK--Space Tracking Earth Station: An earth station which transmits or receives emissions used for space tracking.

TL--Radiodetermination-Satellite Mobile Earth Station: A mobile earth station in the radiodetermination-satellite service. (RR)

TM--Meteorological-Satellite Earth Station: An earth station in the meteorological-satellite service. (RR)

TN--Radionavigation-Satellite Fixed Earth Station: A fixed earth station in the radionavigation-satellite service. (RR)

TO--Aeronautical Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the aeronautical radionavigation-satellite service. (RR)

TP--Earth Station (receiving): An earth station used for receiving. (RR) (TP is not used on applications.)

TQ--Maritime Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the maritime radionavigation-satellite service. (RR)

TR--Space Telemetry Earth Station: An earth station which receives emissions used for space telemetry.

TT--Space Operation Earth Station: An earth station in the space operation service. (RR)

TU--Land Mobile Earth Station: A mobile earth station in the land mobile-satellite service capable of surface movement within the geographical limits of a country or continent. (RR)

TW--Earth Exploration-Satellite Earth Station: An earth station in the Earth exploration-satellite service. (RR)

TX--Maritime Radionavigation-Satellite Earth Station: A fixed earth station in the maritime radionavigation-satellite service. (RR)

TY--Base Earth Station: An earth station in the fixed-satellite service or in some cases in the land mobile-satellite service located at a specified point or within a specified area on land to provide a feeder link for the land mobile-satellite service. (RR)

TZ--Aeronautical Radionavigation-Satellite Earth Station: A fixed earth station in the aeronautical radionavigation-satellite service. (RR)

UA--Mobile Earth Station: An earth station in the mobile-satellite service intended to be used while in motion or during halts at unspecified points. (RR)

UM--Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the radionavigation-satellite service. (RR)

VA--Land Earth Station: An earth station in the fixed-satellite service or in some cases in the mobile-satellite service located at a specified point or within a specified area on land to provide a feeder link for the mobile-satellite service. (RR)

XC--Experimental Contract Developmental Station: An experimental station used for the evaluation or testing under Government contract of electronics equipment or systems in a design or development stage.

XD--Experimental Developmental Station: An experimental station used for evaluation or testing of electronics equipment or systems in a design or development stage.

XE--Experimental Export Station: An experimental station intended for export and used for the evaluation or testing of electronics equipment or systems in the design or development stage.

XM--Experimental Composite Station: An experimental station used in experimental operations of a complex nature not readily specified or used in an operation which is a composite of two or more of the established experimental categories.

XR--Experimental Research Station: An experimental station used in basic studies concerning scientific investigation looking toward the improvement of the art of radiocommunications.

XT--Experimental Testing Station: An experimental station used for the evaluation or testing of electronics equipment or systems, including site selection and transmission path surveys, which have been developed for operational use.

Table of Services, Station Classes, and Stations

Table A is used to determine the proper Station Class (STC) symbol to be used versus the *Service* in which the transmitting station will operate. Frequency bands are allocated to Service(s) based upon the U.S. Government Table of Frequency Allocations.

TABLE A

Table of Services, Station Classes, and Stations

Service	Station Class	Station
1. Amateur	None	Amateur
2. Broadcasting	BC BT	Broadcasting (sound) Broadcasting (television)
3. Broadcasting-Satellite	EB EV	Space (sound) Space (television)
4. Earth Exploration-Satellite	EW TW	Space Earth
<i>Meteorological-Satellite</i>	EM TM	Space Earth
5. Fixed	FX FXD FXE FXH	Fixed Telecommand Fixed Telemetry Fixed Hydrologic and Meteorological Fixed
<i>Aeronautical Fixed</i>	AX	Aeronautical Fixed
6. Fixed-Satellite	EC TC VA TB TI TY	Space Earth Land Earth Earth Coast Earth Base Earth
7. Inter-Satellite	ES	Space
8. Meteorological Aids	SA SAR SM SMB SMD SMRG	Meteorological Aids Mobile Station Radiosonde Meteorological Aids Base Station Radar Beacon Precipitation Gage Meteorological Radar Radiosonde Ground
9. Mobile	FL FLD FLE FLEA FLEB FLEC FLH FLU	Land Telecommand Land Telemetry Land Aeronautical Telemetry Land Flight Telemetry Land Surface Telemetry Land Hydrologic and Meteorological Land Aeronautical Utility Land

Service	Station Class	Station
	MO MOB MOD MOE MOEA MOEB MOEC MOH MOP MOU	Mobile Radio Beacon Mobile Telecommand Mobile Telemetry Mobile Aeronautical Telemetry Mobile Flight Telemetry Mobile Surface Telemetry Mobile Hydrologic and Meteorological Mobile Portable Mobile Aeronautical Utility Mobile
<i>Aeronautical Mobile</i>	FA FAB FAC FAD FAT MA MAD MAP	Aeronautical Aeronautical Broadcast Airdrome Control Telecommand Aeronautical Flight Test Aircraft Telecommand Aircraft Portable Aircraft
<i>Aeronautical Mobile (OR)</i>	FG	Aeronautical
<i>Aeronautical Mobile (R)</i>	FD	Aeronautical
<i>Land Mobile</i>	FB FBD ML MLD MLP	Base Telecommand Base Land Mobile Telecommand Land Mobile Portable Land Mobile
<i>Maritime Mobile</i>	FC FCB FCD MS MSD MSP OD OE	Coast Marine Broadcast Telecommand Coast Ship Telecommand Ship Portable Ship Oceanographic Data Oceanographic Data Interrogating
10. Mobile-Satellite	UA TE EI VA	Mobile Earth Satellite EPIRB Space Land Earth
<i>Aeronautical Mobile-Satellite</i>	EJ TB TJ	Space Earth Aircraft Earth
<i>Land Mobile-Satellite</i>	EU TU TY	Space Land Mobile Earth Base Earth
<i>Maritime Mobile-Satellite</i>	EG TG	Space Ship Earth

Service	Station Class	Station
	TI	Coast Earth
11. Radio Astronomy	RA	Radio Astronomy
12. Radiodetermination	None RG	Radiodetermination Radio Direction-Finding
<i>Radiolocation</i>	LR MR MRP	Land Mobile Portable
<i>Radionavigation</i>	NR RNL RN	Mobile LORAN Land
Aeronautical Radionavigation	AL ALA ALB ALC ALG ALL ALO ALR ALS ALTM ALTO AM AMA	Land Marker Beacon Radio Beacon Radar Beacon (Racon) Glide Path (Slope) Localizer Omnidirectional Range Radio Range Surveillance Radar Land Test (Maintenance) Land Test (Operational) Mobile Altimeter
Maritime Radionavigation	NL NLC NLM	Land Radar Beacon (Racon) Marine Radio Beacon
13. Radiodetermination-Satellite	EF TF TL	Space Earth Mobile Earth
<i>Radionavigation-Satellite</i>	EN TN UM	Space Fixed Earth Mobile Earth
Aeronautical Radionavigation-Satellite	EO TO TZ	Space Mobile Earth Earth
Maritime Radionavigation-Satellite	EQ TQ TX	Space Mobile Earth Earth
14. Space Operation	ET TT	Space Earth
15. Space Research	EH TH	Space Earth
16. Standard Frequency and Time Signal	SS	Standard Frequency and Time Signal

Service	Station Class	Station
17. Standard Frequency and Time Signal-Satellite	EE	Space
18. No Specific Service	DGP	Differential-Global-Positioning-System
		Space Telecommand Space
	ED	Space Tracking Space
	EK	Space Telemetry Space
	ER	Sounder Network
	SN	Sounder Prediction
	SP	Space Telecommand Earth
	TD	Space Tracking Earth
	TK	Space Telemetry Earth
	TR	Experimental Contract Developmental
	XC	Experimental Developmental
		Experimental Export
	XD	Experimental Composite
	XE	Experimental Research
	XM	Experimental Testing
	XR	
	XT	

ANNEX B - TABLE OF EMISSIONS DESIGNATORS

1. Table A-B-1 contains the emission classification symbols for use it Data Item 114.

Table A-B-1 - Required Emission Classification Symbols (Page 1 of 2)

First Symbol - Designates Type of Modulation of the Main Carrier
Unmodulated N - Emission of unmodulated carrier
Amplitude Modulated A - Double sideband H - Single sideband, full carrier R - Single sideband, reduced or variable level carrier J - Single sideband, suppressed carrier B - Independent sidebands C - Vestigial sidebands
Angle-Modulated F - Frequency modulation G - Phase modulation
Amplitude and Angle-Modulated D - Main carrier is amplitude-modulated and angle-modulated simultaneously or in a preestablished sequence
Pulse P - Sequence of unmodulated pulses K - Modulated in amplitude L - Modulated in width/duration M - Modulated in position phase Q - Carrier is angle-modulated during the period of the pulse V - Combination of the foregoing or is produced by other means
Combination W - Cases not covered above in which an emission consists of the main carrier being modulated, either simultaneously or in a preestablished sequence, in a combination of two or more of the following modes: amplitude, angle, pulse
Other X - Cases not otherwise covered

Table A-B-1 (Page 2 of 2)

Second Symbol - Designates the Nature of Signal(s) Modulating the Main Carrier
0 - No modulating signal 1 - A single channel containing quantized or digital information, not using a modulating subcarrier. (Excludes time-division multiplex) 2 - A single channel containing quantized or digital information, using a modulating subcarrier 3 - A single channel containing analogue information 7 - Two or more channels containing quantized or digital information 8 - Two or more channels containing analogue information 9 - Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information X - Cases not otherwise covered
Third Symbol - Type of Information to be Transmitted^a
N - No information transmitted A - Telegraphy - for aural reception B - Telegraphy - for automatic reception C - Facsimile D - Data transmission, telemetry, telecommand E - Telephony (including sound broadcasting) F - Television (video) W - Combination of the above X - Cases not otherwise covered. ^b
^a In this context, the word "information" does not include information of a constant, unvarying, nature such as that provided by standard frequency emissions, continuous wave, pulse radars, etc. ^b A full explanation for the selection of the letter X shall be provided in item 520 unless the application is for a non-directional beacon in the bands 190-435 and 510-535 kHz.

Table A-B-2 - Optional Emission Classification Symbols

Fourth Symbol - Designates the Details of Signal(s)
A - Two-condition code with elements of differing numbers and/or durations B - Two-condition code with elements of the same number and duration without error correction C - Two-condition code with elements of the same number and duration with error correction D - Four-condition code in which each condition represents a signal element of one or more bits E - Multi-condition code in which each condition represents a signal element of one or more bits F - Multi-condition code in which each condition or combination of conditions represents a character G - Sound of broadcasting quality (monophonic) H - Sound of broadcasting quality (stereophonic or quadraphonic) J - Sound of commercial quality (excluding categories defined for symbol K and L below) K - Sound of commercial quality with the use of frequency inversion or band splitting L - Sound of commercial quality with separate frequency modulated signals to control the level of demodulated signal M - Monochrome N - Color W - Combination of the above X - Cases not otherwise covered
Fifth Symbol - Designates the Nature of Multiplexing
N - None C - Code-division multiplex (includes bandwidth expansion techniques) F - Frequency-division multiplex T - Time-division multiplex W - Combination of frequency-division multiplex and time-division multiplex X - Other types of multiplexing

ANNEX C - GEOGRAPHICAL ABBREVIATIONS

This annex contains those abbreviations that will be used in data items 300, 301, 400 401, 530 and 531. The various lists are sorted by the approved code.

UNITED STATES AND POSSESSIONS

50 United States and the District of Columbia

AK	Alaska	MT	Montana
AL	Alabama	NC	North Carolina
AR	Arkansas	ND	North Dakota
AZ	Arizona	NE	Nebraska
CA	California	NH	New Hampshire
CO	Colorado	NJ	New Jersey
CT	Connecticut	NM	New Mexico
DC	District of Columbia	NV	Nevada
DE	Delaware	NY	New York
FL	Florida	OH	Ohio
GA	Georgia	OK	Oklahoma
HI	Hawaii	OR	Oregon
IA	Iowa	PA	Pennsylvania
ID	Idaho	RI	Rhode Island
IL	Illinois	SC	South Carolina
IN	Indiana	SD	South Dakota
KS	Kansas	TN	Tennessee
KY	Kentucky	TX	Texas
LA	Louisiana	UT	Utah
MA	Massachusetts	VA	Virginia
MD	Maryland	VT	Vermont
ME	Maine	WA	Washington
MI	Michigan	WI	Wisconsin
MN	Minnesota	WV	West Virginia
MO	Missouri	WY	Wyoming
MS	Mississippi		

Possession or Commonwealths of the United States (Other than the 50 United States and the District of Columbia)

Caribbean Area

-	Navassa Island
PR	Puerto Rico (including Culebra, Mona, and Vieques)
-	Quita Sueno Bank
-	Roncador Bank (Roncador Cay)
-	Serrana Bank (North Cay, Southwest Cay, Northwest Rocks, Dry Ledge)
-	Serranilla Bank (West Breaker, Beacon Cay)
VI	Virgin Islands (St. Croix, St. John, St. Thomas)

Pacific Area

-	Baker Island
GUM	Guam
HWL	Howland Island
JAR	Jarvis Island
JON	Johnston Island (including Sand Island)
-	Kingman Reef
MDW	Midway (Includes Eastern and Sand Islands)
MRA	(except Guam) Mariana Islands (Formerly Ladrone Islands) (Agrihan, Aguijan, Alamagan, Anatahan, Asuncion, Guguan, Maug, Medinilla, Pagan, Farallon de Pajaros, Rota, Saipan, Sarigan, and Tinian)
PLM	Palmyra Island (Some 50 islands make up the Atoll of Palmyra)
SMA	Samoa (American) (Aunuu, Manua Group [or Islands, i.e., Ofu, Olosega, Tau], Rose Island, Swains Island, Tutuila)
WAK	Wake Island

AREA AND OTHER ABBREVIATIONS

AFR	Africa
ANTR	Antarctica
ARCO	Arctic Ocean
CAM	Central America
CBN	Caribbean
EUR	Europe
FE	Far East (Countries of China, Japan, Korea, Thailand, Brunei, Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Vietnam and East India)
GLM	Gulf of Mexico
GTLK	Great Lakes (collectively)
INDO	Indian Ocean
LAM	Latin America
LANT	Atlantic Ocean
LERI	Lake Erie
LHUR	Lake Huron
LMIC	Lake Michigan
LONT	Lake Ontario
LSUP	Lake Superior
MED	Mediterranean Sea
OCNA	Oceania
PAC	Pacific Ocean
RCVR	Restricted for use only in Passive Sensor and Radio Astronomy listings
SPCE	Space
US	For US only when transmitting and/or receiving in all 50 United States and the District of Columbia
USA	For use only when transmitting and/or receiving in the 48 Contiguous States of the United States and the District of Columbia (This Excludes Alaska and Hawaii)
USP	For use only when transmitting and/or receiving throughout the US (50 States and District of Columbia), the Commonwealth of Puerto Rico, and the Territories and Possessions (does not include the former Trust Territory of the Pacific Islands)

COUNTRY ABBREVIATIONS

ABW	Aruba
AFG	Afghanistan (Islamic State of)
AFS	South Africa (Republic of)

AGL	Angola (Republic of)
AIA	Anguilla
ALB	Albania (Republic of)
ALG	Algeria (People's Democratic Republic of)
ALS	Alaska (not for use in GMF; for ITU use only)
AMS	Saint Paul and Amsterdam Islands
AND	Andorra (Principality of)
AOE	Western Sahara
ARG	Argentine Republic
ARM	Armenia (Republic of)
ARS	Saudi Arabia (Kingdom of)
ASC	Ascension
ATA	Antarctic
ATG	Antigua and Barbuda
ATN	Netherlands Antilles
AUS	Australia
AUT	Austria
AZE	Azerbaijani Republic
AZR	Azores
B	Brazil (Federative Republic of)
BAH	Bahamas (Commonwealth of the)
BDI	Burundi (Republic of)
BEL	Belgium
BEN	Benin (Republic of)
BER	Bermuda
BFA	Burkina Faso
BGD	Bangladesh (People's Republic of)
BHR	Bahrain (State of)
BIH	Bosnia & Herzegovina (Republic of)
BIO	British Indian Ocean Territory
BLR	Belarus (Republic of)
BLZ	Belize
BOL	Bolivia (Republic of)
BOT	Botswana (Republic of)
BRB	Barbados
BRM	Myanmar (Union of)
BRU	Brunei Darussalam
BTN	Bhutan (Kingdom of)
BUL	Bulgaria (Republic of)
CAF	Central African Republic
CAN	Canada
CAR	Caroline Islands
CBG	Cambodia (Kingdom of)
CHL	Chile (except Easter Island)
CHN	China (People's Republic of)
CHR	Christmas Island (Indian Ocean)
CKH	Cook Islands
CLM	Colombia (Republic of)
CLN	Sri Lanka (Democratic Socialist Republic of)
CME	Cameroon (Republic of)
CNR	Canary Islands
COG	Congo (Republic of the)

COM	Comoros (Islamic Federal Republic of the)
CPV	Cape Verde (Republic of)
CRO	Crozet Archipelago
CTI	Cote d'Ivoire (Republic of)
CTR	Costa Rica
CUB	Cuba
CVA	Vatican City State
CYM	Cayman Islands
CYP	Cyprus (Republic of)
CZE	Czech Republic
D	Germany (Federal Republic of)
DGA	Diego Garcia
DJI	Djibouti (Republic of)
DMA	Dominica (Commonwealth of)
DNK	Denmark
DOM	Dominican Republic
E	Spain
EGY	Egypt (Arab Republic of)
EQA	Ecuador
ERI	Eritrea
EST	Estonia (Republic of)
ETH	Ethiopia
F	France
FJI	Fiji (Republic of)
FLK	Falkland Islands (Malvinas)
FIN	Finland
FRO	Faroe Islands
FSM	Micronesia (Federated States of) (Kapingamarangi, Kosrae, Lamotrek, Namonuito, Nukuoro, Oroluk, Pohnpei, Truk, Ulithi, Woleai, Yap)
G	United Kingdom of Great Britain and Northern Ireland
GAB	Gabonese Republic
GCA	Territories of the United Kingdom in Region 1
GCC	Territories of the United Kingdom in Region 3
GDL	Guadeloupe (French Department of)
GEO	Georgia (Republic of)
GHA	Ghana
GIB	Gibraltar
GMB	Gambia (Republic of the)
GNB	Guinea-Bissau (Republic of)
GNE	Equatorial Guinea (Republic of)
GRC	Greece
GRD	Grenada
GRL	Greenland
GTM	Guatemala (Republic of)
GUF	Guiana (French Department of)
GUI	Guinea (Republic of)
GUM	Guam
GUY	Guyana

HKG	Hong Kong
HND	Honduras (Republic of)
HNG	Hungary (Republic of)
HOL	Netherlands (Kingdom of the)
HRV	Croatia (Republic of)
HTI	Haiti (Republic of)
HWA	Hawaii (not for use in GMF; for ITU use only)
I	Italy
ICO	Cocos Keeling Islands
IND	India (Republic of)
INS	Indonesia (Republic of)
IRL	Ireland
IRN	Iran (Islamic Republic of)
IRQ	Iraq (Republic of)
ISL	Iceland
ISR	Israel (State of)
J	Japan (includes Iwo Jima, Marcus Island, Ryu Kyu Islands)
JMC	Jamaica
JON	Johnston Island
JOR	Jordan (Hashemite Kingdom of)
KAZ	Kazakhstan (Republic of)
KEN	Kenya (Republic of)
KER	Kerguelen Islands
KGZ	Kyrgyz Republic
KIR	Kiribati (Republic of)
KOR	Korea (Republic of)
KRE	Democratic People's Republic of Korea
KWT	Kuwait (State of)
LAO	Lao People's Democratic Republic
LBN	Lebanon
LBR	Liberia (Republic of)
LBY	Libya (Socialist People's Libyan Arab Jamahiriya)
LCA	Saint Lucia
LIE	Liechtenstein (Principality of)
LSO	Lesotho (Kingdom of)
LTU	Lithuania (Republic of)
LUX	Luxembourg
LVA	Latvia (Republic of)
MAC	Macao
MAU	Mauritius (Republic of)
MCO	Monaco (Principality of)
MDA	Moldova (Republic of)
MDG	Madagascar (Democratic Republic of)
MDR	Madeira
MDW	Midway Islands
MEX	Mexico
MHL	Marshall Islands (Republic of the) (Ailinglapalap, Arno, Ebeye, Enewetak, Jaluit, Kwajalein, Majuro, Mili, Roi-Namur, Rongelap)

MKD	The Former Yugoslav Republic of Macedonia	
MLA	Malaysia	
MLD	Maldives (Republic of)	
MLI		Mali (Republic of)
MLT	Malta	
MNG	Mongolian People's Republic	
MOZ	Mozambique (Republic of)	
MRA	Mariana Islands (except Guam)	
MRC	Morocco (Kingdom of)	
MRN	Marion Island	
MRT	Martinique (French Department of)	
MSR	Montserrat	
MTN	Mauritania (Islamic Republic of)	
MWI	Malawi	
MYT	Mayotte Island	
NCG	Nicaragua	
NCL	New Caledonia	
NFK	Norfolk Island	
NGR	Niger (Republic of the)	
NIG	Nigeria (Federal Republic of)	
NIU	Niue Island	
NMB	Namibia (Republic of)	
NOR	Norway	
NPL	Nepal	
NRU	Nauru (Republic of)	
NZL	New Zealand	
OCE	French Polynesia	
OMA	Oman (Sultanate of)	
PAK	Pakistan (Islamic Republic of)	
PAQ	Easter Island (Chile)	
PHL	Philippines (Republic of the)	
PHX	Phoenix Islands	
PLM	Palmyra Island (some 50 islands make up the Atoll of Palmyra)	
PLW	Palau (Republic of)	
PNG	Papua New Guinea	
PNR	Panama (Republic of)	
POL	Poland (Republic of)	
POR	Portugal	
PRG	Paraguay (Republic of)	
PRU	Peru	
PTC	Pitcairn Island	
PTR	Puerto Rico (including Culebra, Mona, and Vieques) (not for use in GMF; for ITU use only)	
QAT	Qatar (State of)	
REU	Reunion (French Department of)	
ROD	Rodriguez	
ROU	Romania	
RUS	Russian Federation	
RRW	Rwandese Republic	

S	Sweden	
SCN	Saint Christopher and Nevis	
SDN	Sudan (Republic of the)	
SEN	Senegal (Republic of)	
SEY	Seychelles (Republic of)	
SHN	Saint Helena	
SLM	Solomon Islands	
SLV	El Salvador (Republic of)	
SMA	American Samoa	
SMO	Western Samoa (Independent State of)	
SMR	San Marino (Republic of)	
SNG	Singapore (Republic of)	
SOM	Somali Democratic Republic	
SPM	Saint Pierre and Miquelon (French Department of)	
SRL		Sierra Leone
STP	Sao Tome and Principe (Democratic Republic of)	
SUI	Switzerland (Confederation of)	
SUR	Suriname (Republic of)	
SVK	Slovak Republic	
SVN	Slovenia (Republic of)	
SWN	Swan Islands	
SWZ	Swaziland (Kingdom of)	
SYR	Syrian Arab Republic	
TCA	Turks and Caicos Islands	
TCD	Chad (Republic of)	
TGO	Togolese Republic	
THA	Thailand	
TKL	Tokelau Islands	
TJK	Tajikistan (Republic of)	
TKM	Turkmenistan	
TMP	East Timor	
TON	Tonga (Kingdom of)	
TRC	Tristan da Cunha	
TRD	Trinidad and Tobago	
TUN	Tunisia	
TUR	Turkey	
TUV	Tuvalu	
TZA	Tanzania (United Republic of)	
UAE	United Arab Emirates	
UGA	Uganda (Republic of)	
UKR	Ukraine	
URG	Uruguay (Eastern Republic of)	
USA	The 48 contiguous States of the United States of America and the District of Columbia (excludes the States of Alaska and Hawaii)	
UZB	Uzbekistan (Republic of)	
VCT	St. Vincent and the Grenadines	
VEN	Venezuela (Republic of)	
VIR	United States Virgin Islands (St. Croix, St. John, St. Thomas) (not for use in GMF; for ITU use only)	
VRG	British Virgin Islands	
VTN	Viet Nam (Socialist Republic of)	
VUT	Vanuatu (Republic of)	

WAK	Wake Island
WAL	Wallis and Futuna Islands
YEM	Yemen (Republic of)
YUG	Yugoslavia (Federal Republic of)
ZAI	Zaire (Republic of)
ZMB	Zambia (Republic of)
ZWE	Zimbabwe (Republic of)

ANNEX D - MANUFACTURER CODES

This annex contains those manufacturer codes that will be used as part of the data entered in data items 340,345,440 or 445. The table is sorted by manufacturer name.

CODE	MANUFACTURER NAME
AHS	A. H. Systems, Inc.
AFA	A.F. Antronics
ARD	A.R. & D. Co.
ASP	A/S S.P. Radio
AAC	AACOMM, Inc.
AAN	AANDERAA Instruments
ABC	AB Net Corp.
ABA	ABA Electronics Mechanical System
ABZ	ABZ Swiss Industrial Group of Telecommunications
ACS	AC Sparkplug Co.
ACC	ACE Communications
ACN	ACE R/C Inc.
ACL	ACR Electronics
ACR	Acrodyne or Acrodyne Industries Inc.
ADU	ACS (Advanced Communications System Inc.)
ADR	Adams Russel
ACO	Adcole Corp.
ADD	Addison Industries Ltd.
ADL	Adler Electronics Co. or Adler Educational Systems Division
ADM	Admiral Corp.
ADI	Advance Communications Inc.
ALI	Advance Devices Lab. Inc.
AVS	Advanced Countermeasures Systems
ADO	Advanced Development Laboratory
ADE	Advanced Electromagnetic Inc.
ADC	Advanced Electronics
ADA	Advanced Receiver Research
ATE	Advanced Tech Talk
ATF	Advanced Techcom Inc.
ATN	Advanced Telemetry International
ATS	Advanced Telemetry Systems, Inc.
ATX	Advanced Training Systems
ADT	Advanced Videotech Corp.
AEA	AEA Electronic LTD
ASQ	AEI: Electronics Ltd. or Associated Electrical Industries
ADF	AEL Defense Corporation
AMC	Aeornca Manufacturing Corp.
AAO	Aero Astro LLC
AED	Aero Electronics Development
AGA	Aero Geo-Astro Corp.
ARW	Aero Wave
AEO	Aer-O-Com
ADY	Aerodyne
AJE	Aerojet Electosystems
AJT	Aerojet Precision Weapons Co.
ACE	Aeronautical Communications Equipment Inc.

AER	Aeronautical Electronic Inc.
ARJ	Aeronautical Radio Inc. or ARINC
ANF	Aeronutronic Ford
AES	Aerosonic Corp.
ARI	Aerospace Research Inc.
AOP	Aerospatiale
ARP	Aerospatiale
ARN	Aerotron, Inc.
AVN	Aerovironment
AET	Aertech Inc.
AGN	AGA Navigation Aids Limited
AAS	Aiken Advanced Systems
AIN	Ainslie Corp.
AOC	Air Associates Co.
AOM	Air Comm Electronics
ACI	Air Communications Inc.
AAL	Air Force Avionics Lab
AFL	Air Force Lab Built
AIS	Air Science Inc.
ASW	Air Target Sweden
AIL	Airborne Instrument Laboratories
ACA	Aircraft Accessories Corp.
AAI	Aircraft Armaments Inc.
APD	Aircraft Products Co.
ARC	Aircraft Radio Corp.
AMR	Aircraft-Marine Radio Corp.
AIR	Aireon Manufacture Corp.
AIE	Aire-Sciences, Inc.
AIO	AIRONET
ARO	Aironet
AYI	Airport Systems International, Inc.
AAT	Airsys ATM
ATR	Airtronics Inc.
ALA	Alakai Electronics
AAM	Alascom Inc.
ACT	ALCATEL
ALM	Alcom Limited
ALD	Alder Electronics Inc.
ALN	Alenia Spazio
ALP	Aleph Inc.
AHI	Aleth Inc.
ALF	Alford Manufacturing Co.
ALE	Alfred Electronics
ALO	Alineco
APC	All Products
ACW	Allen D. Cardwell Co.
AOA	Allen Osbourne Associates, Inc.
ALG	Allgon Antenna AD
AEC	Allied Electronics Corp.
ART	Allied Radio Shack
ASG	Allied Signal Commercial Aviation System
ALL	Allison Electronics
ALR	Allister
AIA	Alpha Industries, Inc.
AMQ	Als Marine Radio

ALT	Altech Lansing
ASI	Alto Scientific Inc.
ALU	Aluma Tower Co.
ALV	Alva Radio Industries
ABR	Amber Electro Design, Inc.
AMT	Amcor
AMD	AMD Electronics
AME	AMECO Equipment Corp.
AMI	Amecom Division
ATI	Amerasia Technology Inc.
AEL	American Electric Laboratories Inc. or American Electronic Laboratories
ALS	American Laser Sys Technology
AMF	American Machine and Foundry Co.
AMN	American Nucleonics Corp.
AMO	American Optical Corp.
AMS	American Systems
ATT	American Telephone & Telegraph
ATD	American Training Aid
AEX	Amex Systems, Inc.
AMH	Amherst Systems, Inc.
AMX	Ampex Corp.
AMP	Amphenol Canadian Ltd. or Amphenol Dist. Division
AML	Amplica, Inc.
ARR	Amplifier Research Corp.
ASK	AMSC Skycell, Inc.
ANN	Anderson Lab
AAR	Andrea Radio Corp
ANA	Andrew Antenna Corporation Ltd.
ANC	Andrew California Corp.
AND	Andrew Corp.
AXM	Anixter-Mark Co.
ANM	Anram Electronics
ANI	Antac Industries, Inc.
ATH	Antech Corp.
ANX	Antenex, Inc.
ACU	Antenna Corporation of America
ANE	Antenna Electronics Co.
ANL	Antenna Laboratories Inc.
ANP	Antenna Products Co.
ANR	Antenna Research Associates
ANS	Antenna Specialists Co.
ASY	Antenna Systems Inc.
ATG	Antenna Technology Communications, Inc.
AFC	Antennas for Communications
ANY	Any & Company Ltd.
ANZ	Anzac Industries
AOR	AOR, Ltd.
APE	Apelco or Applied Electronics Co.
APO	Apollo Manufacturing Co.
APP	Applied Communications
ABB	Applied Communications, Division of Amstar
APN	Applied Concepts
APV	Applied Devices Corp.
AEM	Applied Electro Mechanics, Inc.
ALC	Applied Research Corp.

API	Applied Research, Inc.
APA	Applied Specialities Inc.
APS	Applied Systems Engineering
APT	Applied Technology
ARH	Arcata Associates, Inc.
ARF	ARF Products, Inc.
ARK	Arkay International Inc.
ANT	Arnet
ARA	ARTAIS Inc.
ARB	Artars Inc.
ARX	ARTEX Inc.
ARV	Arvin Industries Inc.
ASA	Asahi Optical Co.
ACM	ASCOM
ASN	Aselsan
ARS	Associated Radio Service Co.
ASE	Astral Electronics Inc.
AST	Astro Communication Laboratories or Astaron Electronics Ltd.
ATC	Astro Telecom Corp.
ASM	Astromarine Products Corp.
ASU	Astronautics of America
ASC	Astronomics Corp.
ATW	ATA Defense Industries Inc.
ATA	Atacs Corp.
ATB	ATCI Antennas
ARL	Atir Limited
AAE	Atlantic Aerospace Electronics Corp.
ATL	Atlantic Instrument & Electronics Inc.
ARE	Atlantic Research Corp.
AIL	Atmospheric Instrument Research, Inc.
AIC	Atmospheric Instrumentation Research Corp.
AID	Audio Intelligence Devices Inc.
AUD	Audio-Sine, Inc.
ADV	Audio-Vac
AVX	Audiovox
AUA	Austin Custom Antennas
AUM	Austin Microwave, Inc.
AUS	Austron
ATM	Automation Inc.
AUT	Autonetics
AUP	Autophon
ATO	Autotape
AUR	Autronics
AVK	Avantek
AVA	Avanter Inc.
AVC	Avco Corp.
AEP	Aviation Electric Pacific Ltd.
AEI	Avion Electronics Inc.
AVI	Avitron Inc.
AVM	AVM Instrument Co.
AVT	Avtek Co.
AYD	Aydin
AZD	Azden, Inc.
BCA	Babcock Aerospace

BAB	Babcock Electronics Corp.
BAK	Backgrounds Unlimited, Inc.
BAI	Baird Corp.
BLS	Balise
BRL	Balistic Research Laboratory
BAA	Ball Aerospace
BAL	Ball Brothers
BWI	Barker Williamson
BAR	Barrett Electronics
BAC	Barry Research Corp.
BTX	Bartex Co.
BAE	Barth Engineering & Mfg. Co.
BAS	Bauer Electronic Manufacturing Co.
BAU	Bauer Electronics Corp.
BAY	Bayside Electronics Co.
BEI	Bayside Electronics Inc.
BDM	BDM Corp.
BKR	Becker Avionics
BEC	Beckman Instruments Inc.
BEB	Beckman/Berk
BEE	Beech Aircraft Corp.
BEM	Belair Electronic Laboratory
BHC	Bell & Howell Communications Co.
BLH	Bell Helicopter Textron, Inc.
BEL	Bell Telephone
BRC	Belmont Radio Corp.
BCO	Benco TV Associates Ltd. Canada
BTB	Benco TV Associates, Ltd.
BEN	Bendix Corp. or Bendix Aviation Corp.
BEG	Bendix/King Mobile Communications
BMR	Benmar
BNM	Benmar Division of Computer Equipment
BNR	Benrad, Inc.
BWC	Benrus Watch Co.
BED	Berkeley Division of Beckman Instruments Inc.
BER	Bertea Products or Bertea Corporation
BET	Beta Co.
BUK	Beukers Co.
BDS	Bidirectional Microwave Systems
BIG	Biggs Associates Inc.
BIO	Biocom Inc.
BIR	Bird Electronic Corp.
BII	Bison Instruments Inc.
BIT	Bitro
BKM	B-K Manufacturing Co.
BKG	BKM Electronics
BLA	Blau-Knox Co.
BTL	Blonder Tongue Laboratory, Inc.
BLU	Bludworth or Bludworth Marine Division
BOA	Boeing Aerospace
BOE	Boeing Aircraft
BOP	Bogan-Presto
BCD	Bogen Comm Division Lear Siegler
BON	Bonner Specialties
BZR	Bonzer, Inc.

BOT	Boonton Electronics Corp.
BRA	BR Communications
BRE	Brelonix, Inc.
BRI	Bristol Aerospace Ltd.
BAP	British Aerospace Public, Ltd.
BCC	British Communications Corp.
BSC	British Standard Cable Co.
BTH	British Thompson Houston, Ltd.
BRT	Broadcast Electronics
BMS	Broadcast Microwave Services
BRD	Broadcomm
BRO	Browning Communications Associates
BLI	Browning Laboratories, Inc.
BBR	Brubaker Mfg. Co., Inc.
BRU	Brunswick Co.
BUD	Budelman Electronics Corp.
BRW	Bunker Ramo World Services Corp.
BJH	Bunnell J.H. Co.
BTI	Burle Technologies, Inc.
BUR	Burton Instrumentation, Inc.
BUT	Butler National Corp.
CWR	C.W. Radiation Co.
CBW	Cable Waves
CCC	Cadion Communications Corp.
CAD	Cadre Division of Amphenol
CLF	California Amplifiers
CFM	California Microwave
CLT	California Technology
CLN	Calspan Corp.
CMB	Cambridge Consultants
CFD	Camfield Mfg. Co.
CIA	Campania Industrial Aerospace
CAB	Campbell Manufacture Company, Ltd.
CAA	Canadian Arsenals, Ltd.
CAE	Canadian Aviation Electronics
CDO	Canadian Department of National Defense
CGE	Canadian General Electric Co. or Canadian GE Company, Ltd.
CAM	Canadian Marconi
CMO	Canadian Motorola
CAR	Canadian Radio Corp.
CAT	Canadian Telephone Co.
CAW	Canadian Westinghouse
CNN	Cannon Electronics
CAN	Canoga Electronics Corp.
CNY	Canyon Communications Corp.
CAH	Capehart Corp.
CDN	Cardian Electronics
CDW	Cardwell Mfg. Co.
CCK	Carlson Communication, Inc.
CRY	Carry Phone Corp.
CTP	Carterphone Communications
CRT	Cartwright Electronics Inc.
CWI	Cartwright, Inc.
CVL	Carvill International Corp.

CTR	Cattron, Inc.
CBM	CBM Electronics
CCA	CCA Electronics Corp.
CEO	Celesco Industries
CLW	Celwave Systems
CER	Centry Research Corp.
CEU	Centurion International, Inc.
CME	Century Metal Parts Corp.
CAC	Cessna Aircraft Co.
CET	CETEC Vega
CHE	Challenger Electronics Corp.
CHV	Chance Vought Aircraft Corp
CHA	Channel Master Corp.
CHK	Checker Electronics Corp.
CES	Checkpoint Systems, Inc.
CHL	Chelton, Inc.
CTN	Chemrad Tennessee Corp.
CHT	Chester Electronics
CHD	Childs
CNA	China Electronic Import and Export Corp.
NRN	China North Industries Corp.
CHR	Chris Craft Corp.
CHU	CHU Associates
CIN	Cincinnati Electronic Corp.
CQP	Cinequip, Inc.
CIR	CIR Industries
CSR	Citizen Ship Radio Corp.
CIT	Citizens Radio Corp.
CLM	Clairmonte Industries
CLA	Clarion Corp.
CLI	Clark Instrument Co.
CLD	Clegg Division of International Signal & Control
CLE	Clegg Laboratories, Division of Squires-Saunders Inc.
CED	Cleveland Electronics, Inc.
CEI	Cleveland Electronics, Inc.
CMI	CMI, Inc.
CCF	Coastal Climate Company
CBR	Cober Electronics, Inc.
COB	Cobra
COH	Cochran
CPL	Codan Pty, Ltd.
CDR	Codar Ocean Sensors
CCR	Coherent Radiation Co.
COL	Collins Radio Co.
CRC	Collins Radio of Canada
CRR	Colonial Radio Corp.
CEL	Colorado Electronics
CCO	Colt Communications Corp.
CBC	Columbian Bronze Corp.
CHI	Columbian Hydronxonics Inc.
CEC	Columbus Electronics Corp.
CNE	Com/Nav Electronics
CRE	Comaire Electronics
CNT	Comant
CCE	Comelit Compagnia Electronics

CMC	Comet Company, Ltd.
CRB	Commercial Resources Communications
CAI	Communication Associates, Inc.
COC	Communication Co.
COE	Communication Electronics Co.
COA	Communication Specialities
CAP	Communications Applied Technology
CCI	Communications Carriers, Inc.
CCJ	Communications Co., Inc.
CCM	Communications Components Corp.
CUC	Communications Devices Co.
CEN	Communications Engineering Co.
CEE	Communications Equipment Engineering Co.
CII	Communications Industries, Inc.
CML	Communications Measurement Laboratory
COP	Communications Products Co.
CSS	Communications Satellite Corp.
CSP	Communications Specialists
CMT	Communitronics
CMU	Communitronics Ltd
CPD	Compudyne Corp. EWI Division
CPA	Computalert
CDB	Computing Devices Co.
COM	Comrex
CMR	COMSAT, RSI
COI	Comtech Lab, Inc.
CMW	Comwave
CWE	Comwave
CRP	Concord Electronics Corp.
COD	Conductron Corp.
CNC	Conic Corp.
CNR	Conifer
CTT	Connecticut Telephone & Electric
CDI	Consultants and Designers, Inc.
CCH	Consultants Choice, Inc.
CCP	Continental Electric Corporation
CEM	Continental Electronics Manufacturing Co.
CON	Continental Electronics, Ltd.
COR	Continental Radio
CTM	Continental Microwave and Tool Co.
COT	Contraves AG
CNI	Contraves Italiana
CCB	Control Chiefs, Inc.
CDC	Control Data Corp.
CCD	Control Industries
CLC	Control Laser Corp.
CSI	Control Science, Inc.
CVR	Convair
CKC	Cook Communications Corp.
COK	Cook Electric Co.
CAL	Cornell Aeronautical Laboratories, Inc.
COO	Coro Metrics Medical Industries
CMS	Cosmos Industries
COS	Cosser Electronic
CIL	Cosroe Instruments, Ltd. (UK)

COU	Courier Communications, Inc.
CRA	Craig System, Inc.
CRF	Crofs Electric Co.
CRO	Crosley
CRH	Crouse-Hinds
CBE	Crown Broadcast Electronics
CRU	Cruise Technology
CRN	Crylarm
CSA	CSI Electronics
CTA	CTA Space Systems
CTC	CTI Corp.
CUB	Cubic Co.
CIC	Cubic Industrial Corp.
CUL	Culbertson Industries, Inc.
CUR	Curtis Wright Corp.
CUS	Cush Craft
CUM	Custom Electronic Manufacturing Co.
CSC	Customs Signal Corp.
CUT	Cutler Hammer Inc. or AIL Division of Cutler Hammer
CYB	Cybermation
CYT	Cybernet International, Inc.
CYL	Cylink Corporation
DAG	Dage Electric Co.
DAV	Dalmo Victor Co.
DAN	Daniels Electronics Limited
DAM	Danmar
DPA	Dapa Communications, Inc.
DAR	Dare, Inc.
DAT	Data Control Systems
DMI	Data Marine International
DPR	Data Products, Inc.
DRK	Data Radio Corp.
DTS	Data Transmission Science, Inc.
DTW	Datawell
DTM	Datum
DAE	Davco Electronics Inc.
DOP	Davidson Optronics
DVS	Davis Co.
DVT	Dav-Tron Co.
DAY	Daystrom, Inc.
DAP	Dayton Aircraft Products Inc.
DGI	Dayton Granger, Inc.
DTE	Daytong Electronics, Ltd
DSI	Daytron Systems, Inc.
DCF	DCF Systems, Ltd.
DEB	DEBEG-GMBH
DBS	DeBernardi Scientific Corp.
DCE	Decatur Electronics, Inc.
DNS	Decca Navigator Systems, Inc.
DEA	Decca Radar Ltd. UK
DRI	Decca Radar, Inc.
DEC	Decibel Products, Inc.
DCI	Defense Communications Engineering Inc.
DEI	Defense Electronics

DSY	Defense Systems, Inc.
DEF	Deferral
DMT	Defiance Machine Tool Co.
DEG	DEL (Design Engineering Lab, Inc.)
DLN	Del Norte
DNT	Del Norte Technology, Inc.
DCM	Delcom
DFN	Delfin
DLF	Dell Space Star
DEL	Delmar Engineering Laboratories
DES	Delstar Corp.
DEM	Demco Electronics
DEN	Denel Aerospace Group
DLB	Denro Lab
DER	Dentron Radio Corporation
DRD	Dero Research Development Corp.
DRG	Deskin Research Group
DET	Detroit Bullet Trap Co.
DEV	Develco, Inc.
DEW	Dewey GC, Inc.
DJH	Dewitt, John H.
DHV	DHV, Inc.
DIC	Diamond Antenna-Microwave Co.
DIL	Diamond Laboratories
DJC	Dickey-John Corp.
DIE	Dielectric Products Engineering Co., Inc.
DMC	Digital Microwave Corp.
DIG	Digital Radio
DIT	Digitize, Inc.
DIM	Dimick Manufacture Corp.
DIR	Direction Corp.
DIV	Divco Wayne Corp.
DVR	Diversitel Communications, Inc.
DIX	Dixon Industries Corp.
DNE	DNE Technologies, Inc.
DRC	Dollar, Robert Co.
DOE	Domestic Radio
DOI	Domino, Inc.
DOL	Doolittle Radio, Inc.
DAD	Door Alarm Devices Corp.
DOM	Dorne Margolin, Inc.
DOS	Dorsett Electronics Division(LaBarge, Inc.)
DOR	Dorsett Laboratories
DOU	Douglas Aircraft
DGR	Douglas Randall Div. of W.K. Radio Alarm Box
DOW	Dow Chemical Co.
DRA	Drake RF Co.
DRS	Dressler Engineering, Inc.
DRP	DRS Precision Echo, Inc.
DSC	DSC Communications
DMR	Dubose Marine Radio
DUB	Dubrow Development Co.
DUT	Duelatron
DLA	Dumont Division of Ling Altec, Inc.
DUM	Dumont Laboratories or Dumont, Allen B. Laboratories, Inc.

DXR	DX Radio Corp.
DYM	Dymec
DMD	Dyna Magnetic Devices
DYR	Dynair Electronics
DLC	Dynalab Corp.
DYA	Dynalec Corp.
DYC	Dynamic Communications
DYS	Dynascan Corp.
DYN	Dynatronics, Inc.
EAT	Eagle Technologies, Inc.
EAG	Eagle-Picker Industries, Inc.
EAR	Earmark, Inc.
EAK	Easker
EAS	Eastern Industries, Inc.
EMW	Eastern Microwave Corp.
ECL	Eaton Corp. AIL DIVN.
EBC	EB Corp.
EBN	EB-Nera
ETR	Ecatek, Inc.
ECC	ECI Telecom LTD
ECO	Econolite
ECR	Eddor
EDI	Edison Pageitalia
EDL	Edler Industries
EDR	EDO Aire
EDO	EDO Corp.
EEB	EEB (Electronic Equipment Bank)
EER	EER Systems
EFD	EF Data
EEI	EICO Electronics Instruments Co.
EIT	Eitel Electronics
EIM	Eitel McCullouth, Inc. (EIMAC)
EKP	EK Products, Inc.
ELD	Eldico Electronics
ELO	Eldorado Electrodata
ELY	Eldyne, Inc.
ELI	Electrac, Inc.
EST	Electric Service Co.
EVC	Electric Voice Corp.
EDA	Electro Data, Inc.
EMA	Electro Magnetic Sciences Co.
EMR	Electro Mechanical Research, Inc.
EOS	Electro Optical Systems
ETO	Electro Systems International
ELR	Electrofab
ELF	Electrofact NV
EGD	Electrogarde, Inc.
ELB	Electrolab
ETC	Electromagic Technology Corp.
EMP	Electromagnetic Processes, Inc.
ELS	Electromagnetic Sciences, Inc.
ESL	Electromagnetic Spectrum Laboratory
EIP	Electromatic, Inc.
EMH	Electro-Mechanics Co.

EMS	Electrometrics
ELE	Electron Corp.
EDC	Electronic Development Corp.
EDZ	Electronic Devices Corp.
EEC	Electronic Engineering Co.
ELL	Electronic Laboratories, Ltd.
ELM	Electronic Material International, Ltd.
ENC	Electronic Navigation Corp.
ENI	Electronic Navigation Instruments
ESQ	Electronic Signal Products
ESP	Electronic Speciality Co.
ESS	Electronic Support Systems, Inc
ESE	Electronic System Technology
ETS	Electronic Systems Technology
EMD	Electronics & Manufacturing Co.
ECI	Electronics Communications, Inc.
ELC	Electronics Concepts, Inc.
EMC	Electronics Missiles Communications, Inc.
ERI	Electronics Research Industries
ECT	Electrotape
ELT	Electrotechnic Corp.
EES	Elisra Electronics System, Ltd.
ELA	Ellason
EOI	Elmer (Italy)
EAI	Elta-Ashdod Israel
ELU	ELTS Unlimited, Inc.
EII	EMC Instrument Co.
EEE	EMCEE, Co.
EMB	Emergency Beacon Corp.
EEL	Emerson Electric Co.
EME	Emerson Research Labs
ERD	Emhiser Rand
ERX	Emhiser Research, Inc.
EML	EMI Electronics, Ltd.
EMI	EMI-Cossor Electronics Ltd. or EMI Marine Division
EMT	EMR (Sangamo Weston, Inc.)
ENA	ENAC/Triton Corp.
ECM	Encomm, Inc.
END	ENDECO
ESI	Energy Systems, Inc.
EGX	Energy-Onix
ENG	Engineering Services
ETE	Enterprise Electronics, Inc.
EDE	Environment Development Corp.
ENR	Environmental Research Institute
EPS	EPSCO, Inc.
EPL	Epsilon Lambda Electronics Corp.
ERP	Erapsco
ERC	ERCO Radio Laboratories
ERN	Erichson
ERA	Ericsson, L.M. Ltd.
EGG	Ernst, Grier Germerhausen Co.
ESC	ESCO
ESD	ESL, Inc.
ESM	Espey Manufacturing Co.

ESN	Espey Mfg Electronics
ESR	Esterline
ESY	E-Systems
EKA	Eureka Sys, Inc.
EUU	European Antennas
ESG	Eurosatellite GMBH
EXE	Executive Communications
EXT	Executone, Inc.
EXX	EXETEX
EXI	EXICOM New Zealand, Ltd
EYR	Eyring Research Institute
FHM	F & H Manufacturing Corp.
FAM	F & M Electronics
FGE	F. G. Engineering
FWC	F.W. Carpenter Manufacturing Co.
FCM	Fairchild Camera and Instruments
FDC	Fairchild Data Corporation
FAC	Fairchild Engineering Corp.
FAI	Fairchild Stratos
FAN	Fannon
FAG	Fargo Co.
FEC	Farinon Electric
FMI	Farinon Microwave
FAR	Farnsworth TV Radio
FAA	Federal Aviation Administration
FCC	Federal Communication Corp.
FSS	Federal Sign and Signal
FSC	Federal Signal Corp.
FSR	Federal Signal Radio
FET	Federal Telegraph Co.
FED	Federal Telephone Radio Corp.
FEM	FEMCO, Inc. or FEMCO Div. Gulton Industries
FER	Ferguson Communications, Inc.
FIC	Ferritronics
FFE	F-F Electronics
FIB	Fibercom
FIG	Figgie International
FIL	Filmdex Corp.
FCO	FINCO
FIN	Finney Co.
FRL	Fisher Research Laboratory, Inc.
FLA	Flam Russell
FGI	Fleetwood Group, Inc.
FLL	Flight Refuel, Ltd.
FLR	Flir Systems, Inc.
FLT	Flite-Tronics
FEI	Florida Communications and Electronics, Inc.
FLO	Flotronic Products, Inc.
FOK	Fokker
FNT	Fonet, Inc.
FON	Fontek
FAS	Ford Aerospace Corp.
FOR	Fort Worth Tower Co.
FOS	Foster Airdata Systems ,Inc.

FAP	Fran Air Products Co.
FRA	Francis Industries, Inc.
FAL	Frant, Alan I.W.
FRV	Fraser-Volpe
FRW	Freewave, Inc.
FRH	French Center National D=Etudes Spatiales (CNES)
FEL	Frequency Engineering Laboratories
FSI	Frequency Source, Inc.
FUE	Fuchs Electronics
FUJ	Fujitsu Tem Corp. of America
FUR	Furuno
FUT	Futaba
GLR	G&L Marine Radio
GAB	Gabriel Corp.
GEI	Galaxy Electronics, Inc.
GMS	Galaxy Micro Systems, Inc.
GAM	GAM Electronics, Inc.
GAW	Gamewell Division of Gulf Western
GAI	Garmin International
GAR	Garrett Manufacturing, Ltd.
GAD	Gates American Corp.
GAT	Gates Radio Co.
GEC	GEC Telecommunications, Ltd.
GEM	Gem Marine Products
GTS	Gemtronics
GEV	Genave
GAC	General Atronics Corp.
GAE	General Aviation Electronics
GAP	General Avionics
GBC	General Bronze Corp.
GDC	General Development Corp.
GDE	General Dynamics/Electronics
GEN	General Electric Corp.
GEE	General Electric England
ADS	General Electric/Astro Space Division
GEL	General Electronics Laboratories, Inc.
GIC	General Instrument Corp.
GMI	General Microwave Corporation
GME	General Microwave Services
GMC	General Motors Corp.
GPI	General Precision Inc., Ltd. (UK)
GPL	General Precision Laboratories or Singer-General Precision, Inc.
SGR	General Precision Laboratory, Inc.
GRC	General Radio Co.
GRT	General Radiotelephone Co.
GSE	General Service Engineering
GEP	Genesys Systems
GSS	Geo Space Systems, Inc.
GDN	Geodynamics Corp.
GEO	Geodyne Corp.
GOM	Geomation
GES	Geophysical Survey System, Inc.
GIT	Georgia Institute of Technology
GOT	Geotel Development

GHH	GH Harlow, Inc.
GIB	Gibson Antennas
GIL	Gilfillan Bros, Inc.
GIM	Gimeni III
GLB	GLB Electronics, Buffalo, N.Y.
GYE	Glenayre
GMW	Global Microwave, Inc.
GLO	Globe Industries
GDI	Godfrey Engineering, Inc.
GON	Gonset Corp. or Gonset Division of Aerotron or Dumont Division of Gonset
GOA	Goodyear Aerospace Corp.
GOU	Gould, Inc.
GAL	Granger Associates ,Ltd.
GRA	Granger Associates or Bauer Broadcast Division of Granger
GTC	Granite Telecom Corp.
GNT	Grant Applied Physics
GRY	Gray Radio Company, Inc.
GRE	GRE America
GRR	Green Mountain Radio Research
GRO	Ground Data Corp.
GRU	Gruen Watch Co.
GAS	Grumman Aerospace Corp.
GTL	GTE Lenkurt
GTP	GTE Products Corp.
GTE	GTE Sylvania
GUD	Gudeman Co.
GUL	Gulton
GII	Gulton Industries, Inc.
GYR	Gyrodyne Co.
HRM	H.R. Smith
HCC	Hal Communications
HSA	Hallands Signal Attaraten
HAL	Hallicrafter Co.
HAI	Hallmark Instruments, Inc.
HSD	Halstead
HUA	Hamilton Standard Division-United Aircraft
HAM	Hammarlund Manufacturing Co. or Dumont Division of Hammarlund
HMT	Hamtronics
HTI	Hamtronics, Inc.
HAN	Handar Company
HAE	Harbor Electronics
HES	Harbor Electronics Services
HAK	Harkins Radio
HAD	Harris Aerospace Systems Divn.
HAC	Harris Corp.
HFI	Harris Farinon, Inc.
HIC	Harris Intertype Corp.
HJH	Harrison, John H.
HDL	Harry Diamond Lab.
HME	Hartman Marine Electronics Corp.
HMC	Hartman Marine Equipment Corp.
HSY	Hartman Systems (Div. of ATO)
HAR	Harvey Radio Laboratories, Inc.
HAS	Hastings Raydist, Inc.

HSC	Hawkeye Systems Corp.
HAY	Hays Corp.
HAZ	Hazeltine Corp.
HEA	Heath Co.
HEC	Hecules Defense Electronics Systems
HMK	Heimark Electronics Laboratory
HEK	Hekimian Laboratories, Inc.
HRS	Hendy Radio Service
HEN	Hendys Two Way Radio Service
HKL	Henitz & Kaufman, Ltd.
HRC	Henry Radio Co.
HMS	Herley Microwave Systems
HER	Hermer Electronics, Ltd.
HEL	Hermes Electronics
HEP	Hewlett Packard
HIQ	HI-Q Electronics, Inc.
HIT	Hittite Microwave
HMI	HM Electronics, Inc.
HOB	Hobby Lobby International
HOF	Hoffman Electronics Corp.
HLI	Holobeam Laser, Inc.
HON	Honeywell
HOR	Horizon
HAP	Hornet Antenna Products Co.
HDS	Household Data Services, Inc.
HOU	Houston Corp.
HRB	HRB Singer, Inc.
HTS	HT Systems
HUB	Hubcom (Hubbard Communications, Inc.)
HUD	Hudson American
HUG	Hughes Aircraft Co.
HTC	Hughes Tool Co.
HUL	Hull Electronics Co.
HUN	Huntley
HUS	Hustler
HYB	Hybrid Network, Inc.
HSS	Hydro Space Systems
HYG	Hygain Antenna Products
HYE	Hy-Gain Electronics Corp.
HYP	Hyperlink Technologies
HYT	Hytel Corp.
HYN	Hytenna
ICM	ICOM
IDE	IDC Electronics
IDI	Identification Devices, Inc.
IEC	IEC Electronics Corp.
ISI	IFR Systems, Inc.
IIT	IITRI
IKE	Ikegami Electric Co.
BHA	India Bharat
ITH	Indiana Technical Corp.
ICS	Industrial Comm Systems
IND	Industrial Radio Corp.
IFD	In-Flight Devices Corp.

ISS	Information Station Specialist
INL	Inland Communications, Inc.
IST	Innerspace Technology, Inc.
INO	Inovonics Corporation
IGT	Insight Technology
IFR	Instrument Flight Research Corp.
IWI	Insulated Wire, Inc.
INE	Intech, Inc.
III	Intellitech Industries, Inc.
IEI	Intercontinental Electronics, Inc.
IEM	Intermec
INM	Intermic
IAL	International Aeradio, Ltd.
IBM	International Business Machine Co.
ICO	International Corp.
ILS	International Laser Systems, Inc.
ISY	International Ltd.
IMC	International Microwave Corp.
IMM	International Mobile Machine, Inc.
IMT	International Mobile Telephone Systems
IRE	International Radio Electronics Corp.
ISC	International Signal and Control
ISE	International Standard Electric Corp.
ITP	International Telephone & Telegraph Corp. or ITT Industrial Products
INV	Internav, Ltd.
INT	Interstate Electronics Co.
IOT	Interstate Oil Transport Co.
INC	INTRAC
INR	Intrelex, Inc.
ISD	ISC Defense Systems
IRC	Islip Radio Corp.
IAI	Israel Aircraft Industries, Ltd.
ITA	ITA Electronic Corp.
ITR	Itek Corp.
ITI	ITI Electronics, Inc.
ITO	ITT Aerospace/Optical
ITV	ITT Avionics
ITD	ITT Decca, Inc.
ITF	ITT Defense Communications
ITB	ITT Electron Tube Division
ITT	ITT Federal Laboratories
ITG	ITT Gilfillan
ITK	ITT Kellogg Communication System
ITM	ITT Mackay Marine
IMA	ITT Mobile Communications
ITS	ITT Standard
ITC	ITT Telecommunications
JHS	J&H Smith Mfg., Co.
JCA	J.C. Air
JCC	J.C. Chastain
JCP	J.C. Penney Company
JSB	J.S. Betts Co.
JAM	Jampro Antenna Co.
JAH	Janco Inc.

JNL	Janel Labs
JRC	Japan Radio Co.
JRL	Japan Remote Control Company, Ltd.
JAC	JASCO International
JAS	Jasik Laboratory
JAY	Jay Tapp Inc.
JAB	Jaybeam
JEF	Jefferson Ray, Inc.
TRV	Jefferson Travis
JER	Jerrold Electronics Corp.
JEP	Jet Propulsion Laboratory
JET	Jetronix
JFD	JFD Research-Development Laboratories
JRS	Joes Radio Shop
JDE	John Deere
JHU	Johns Hopkins University
JNN	Johnson Associates
JCI	Johnson Control, Inc.
JDT	Johnson Data Telemetry Corp.,
JOH	Johnson E.F.
JVC	JVC Corp.
KAL	K and L Microwave Inc., A Dover Tech Co.
KAR	Kaar Engineering
KRL	Kahn Research Laboratories
KMU	Kalmus
KAM	Kaman Electronic Systems Division
KAT	Kathrein, Inc.
KAV	Kavouras, Inc.
KAW	Kawasaki Industries
KDK	KDK Inc.
KEA	Kearfott Engineering Corp. USA
KEB	Kebby Microwave Corp.
KEI	Keith Anderson Co. or Keith V. Anderson
KEC	KEL Corp.
KTI	Keltec Industries
KEL	Kelvin Hughes, Ltd.
KEN	Kennedy Co.
KED	Kenwood
KEY	Key Systems, Inc.
KFE	K-F Electronics
KIL	Kilgore Corp.
KIM	Kimball Products Co.
KMC	Kinematics
KIN	King Radio Corp.
KIG	Kingfisher
KIS	Kings Electronics Co.
KIE	Kinn Electronics Corp.
KLM	KLM Communications
KNI	Knight Electronics Corp.
KKC	Kobe Kogyo Corp.
KOK	Kokusai Electric Co.
KOL	Kollsman Instrument Corp.
KOV	Kongsberg Vapenfabrikk
KOE	Konigsberg Electronics, Inc.
KOR	KOR Electronics, Inc.

KRD	Korad Corp.
KRA	Kraft Systems
KRE	Kreco Co.
KRI	Kris Inc.
KUB	Kubota Kisho Shokki Co.
KUX	Kustom Electronics Inc.
KUS	Kustom Signal Corp.
KVH	KVH Industries, Inc.
KYD	Kyokuto Denshi
KDC	Kyoritsu Dempa Co.
LLE	L.L. Electronics
LSC	L-3 Space Communications
LAB	La Barge, Inc.
LFE	Laboratory for Electronics, Inc.
LAM	LaFayette Micro
LAF	Lafayette Radio or Lafayette Radio & Electronics
LAG	LAG Engineering
LUG	Laguna Industry
LPE	Lambda Pacific Engineering
LMB	Lambda RF Systems
LAN	Lance Antenna Corp.
LAP	Lapointe Industries, Inc.
LAR	Largo Electronic Manufacturers Inc.
LAS	Larson Electronics
LLC	Laset Link Corp.
LAT	Latus D.N. & Co.
LAV	Lavoie Laboratories, Inc.
LLL	Lawrence Livermore Laboratory
LSB	Lear Siegler/Bogen
LEA	Lear, Inc.
LCM	Lecom, Inc.
LET	Lectrosonics, Inc.
LEI	Leigh Instruments, Ltd. or Leigh Systems
LEG	Leigle Instruments, Ltd.
LEN	Lenkurt Electric Co.
LEE	Lenkurt Electric Company of Canada, Ltd.
LFC	LFE Electronics Corp.
LGD	L'Garde
LIB	Librascope
LIG	Lightcraft Avionics
LIL	Lincoln Laboratory
LNN	Linear Corp.
LSI	Linear Systems, Inc.
LIN	Ling Systems, Inc.
LTV	Ling Temco Vaught, Inc.
LCO	Link Communications
LKW	Linkavit Wireless, Inc.
LIR	Linkradio or Litton Educational Technical Div. or Gonset Division of Layco, Inc.
LII	Litton Industries
LIT	Litton Systems, Ltd.
LIV	Livermore Data Systems
LNR	LNR Communications, Inc.
LOC	Lockheed Electronics
LOM	Lockheed Martin Astro Space

LOS	Lockheed Sanders, Inc.
LOG	Logimetrics, Inc.
LEC	Lorain Electronics Corp.
LDS	Loral Data Systems
LOE	Loral Electronics Corp.
LRE	Lorenz
LOR	Lorrain County Radio Corp.
LOA	Los Alamos National Laboratories
LAA	Los Alamos Technical Associates, Inc.
LOK	Lotek
LOT	Lotran, Inc.
LPB	Low Power Broadcast Co.
LTS	LTV Aerospace Defense Co. (Sierra Research Division)
LED	Lucas Ledex
LUC	Lucos Air Space
LUE	Lunar
LXE	LXE, Inc.
LYN	Lynch Communications Systems, Inc.

MZE	M Z Enterprises
MAB	M/A Comm AC, Inc.
MAM	M/A COMM MAC
MVI	M/A-COM Video Systems, Inc.
MSM	M2 Antenna Systems Inc
MNP	Machinostroenie N.P.O.
MKY	Mackay Radio-Telegraph Co.
MAF	MAFCO
MGC	Magellan Corp.
MAG	Magnavox Co.
MGN	Magnetic AB (Sweden)
MAI	MAICO Hearing Instruments or Mattel, Inc.
MAJ	Majestic Radio-Television Co.
MOB	Mal Mobley
MLA	Malabs
MBR	Malibu Research
MAN	Manson Laboratories, Inc.
MRZ	Marantz
MCJ	Marconi Electronics
MAC	Marconi Instruments, Division of English Electronics
MIM	Marconi International Marine Co.
MCI	Marconi Radio
MSD	Marconi Space and Defense Systems
MWT	Marconi Wireless Telegraph Co., Ltd.
MAL	Marelli Lenkurt Electric
MAY	Marine Technical Division of Dayton Aircraft
MAE	Marine-Air Systems, Ltd.
MRN	Mariner
MTX	Marintek
MAK	Mark IV Industries, Ltd.
MAR	Mark Products Co.
MAH	Martch Co.
MTH	Martech, Inc.
MRR	Marti
MRT	Marti Electronics
MMA	Martin Marietta Air Space

MEL	Maryland Electronics Corp.
MSA	Massa Products
MMM	Master Mobile Mounts, Inc.
MMS	Matra-Marconi Space
MAT	Matsushita Electric Corp.
MXP	Max Planck Institute
MAA	Maxar
MXN	Maxon Electronics, Inc.
MXI	MAXRAD, Inc.
MAX	Maxson Electronics Corp. (Electronics Design)
MXL	Maxwell Electronic Corp.
MBA	MB Associates
MCD	McDonnell Aircraft Corp.
MDD	McDonnell-Douglas Corp.
MCM	McMartin Industries, Inc.
MDI	MDM, Inc.
MDT	MDTT, Inc.
MEC	Mechanical Product, Inc.
MGI	Megapulse, Inc.
MGS	Megastar
MTG	Mei Technology
MEI	Meisei Denki Co.
MPR	Melpar, Inc.
MEN	Mentor Radio Co.
MBC	Meteor Communications Consultants, Inc. MBEMarcel Bassaulet Electronics
MTR	Meteor, Communications Corp.
MSY	Meteric Systems Corp.
MEE	Metric Engineering
MDS	Metrodata Systems
MER	Metron Instrument Co.
MET	Metrotek Electronics Co.
MCO	Micro Communications Co.
MCT	Micro Control Specialities
MCE	Micro Electronics
MEJ	Micro Electronics, Inc.
MRI	Micro Radionics, Inc.
MRS	Micro Systems, Inc.
MCA	Micro-Avionics
MCC	Microcom Corp.
MIC	Microdot, Inc.
MDC	Microdyne Corp.
MID	Microfix Instruments, Ltd.
MCF	Microflect
MLF	Microlab/FXR, Inc.
MIL	Micro-Linke Corp.
MIF	Micromega, Divn of Bunker-Ramo Corp.
MML	Micromil Electronics, Ltd.
MCS	Micronetics
MTB	Micro-Now Instruments Co., Inc.
MTC	Micro-Tel Corp.
MIV	Microvision
MWA	Microwave Antenna Designs, Inc.
MIW	Microwave Associates, Inc.
MWB	Microwave Bypass Systems
MCL	Microwave Cavity Laboratory

MWC	Microwave Control Co.
MDY	Microwave Data System
MDM	Microwave Design Manufacturing, Inc.
MWD	Microwave Devices, Inc.
MNI	Microwave Network, Inc.
MPD	Microwave Power Devices, Inc.
MWI	Microwave Power, Inc.
MPI	Microwave Products, Inc.
MWO	Microwave Radio Corp.
MRW	Microwave Resources, Inc.
MWS	Microwave Sensors
MSC	Microwave Service Co.
MSP	Microwave Speciality Corp.
MAS	Mid American Relay Systems
MIN	Midland Intl. Corp.
MSR	Mid-State Radio
MAD	Midwest Audio Corp. or Madigan Corp.
MRC	Midwest Radio Corp.
MBI	MIL 3, Inc.
MTP	Military Technology PTY, Ltd.
MRA	Miller RA
MFT	Milliflect, Inc.
MMT	Millimeter Wave Technology
MXR	Min X Radio
MIT	Minatronics Corp.
MHR	Minneapolis Honeywell Regulator
MIR	Mirage System
MIA	Missawa
MIS	Mission Engineering Corp.
MCH	Mitchell Camera Corp.
MIZ	Mitchell Industries, Inc.
MIE	Mitre Corp.
MRX	Mitrex
MIB	Mitsubishi Denki Co. or Mitsubishi Electric
MOX	Mobile Communications
MMR	Mobile Marine Radio
MBK	Mobile Mark Antenna
MTI	Mobile Telesystem, Inc.
MTS	Mobile Telesystems
MOL	Mobilet Corp.
MOD	Modar Electronics
MME	Model Engineering and Manufacturing Corp.
MOC	Model Rectifier Co.
MOE	Monaco Enterprises, Inc.
MRE	Monicor Electronics
MON	Monitor Electronics
MTN	Monitron Corp.
MOY	Monsant Co.
MNT	Montec (Divn of E-Systems)
MGW	Montgomery Ward
MNC	Montronics, Inc.
MOO	Moog Industrial Control Corp.
MOR	Morad Electronics Corp.
MFX	Morfax, Ltd.
MRM	Morrow Radio Manufacturing Co.

MOA	Mosely Associates, Inc.
MOF	Mosely Associates, Inc.
MOS	Mosely Electronics Co.
MOT	Motorola Corp.
MPH	MPH Industries, Inc.
MUL	Multi-Elmac Co.
MUP	Multiplex Services Corp.
MPN	Multipoint Network
MPC	Multi-Products Co.
MUS	Multitech Power Systems/Avionics
MUT	Multitone Electronics, Ltd.
MUI	Multronics, Inc.
MUN	Muniquip Co.
MEM	Munston Electronic Manufacturing Co.
MUX	Munston Electronics Manufacturing Corp.
MUZ	Munston Manufacturing & Service Inc.
MUE	Murphy Electronics Division of Rank Corp.
NYT	N.Y. Technical Institute of Cincinnati
NSI	Nady System, Inc.
NAL	NALCO
NAN	Nanayo Electric Co.
NAK	Nankai Musen Co.
NPC	NAPCO Industries
NRB	NARCO
NAR	Narda Microwave Corp.
NRC	National Aeronautic Corp.
NCR	National Cash Register of Canada
NCF	National Center for Atmospheric Research
NAC	National Co.
NEL	National Electronics Laboratory
NGT	National Gateway Telecom, Inc.
NAU	Nautel
NAD	Naval Air Dev. Ctr.
NAW	Naval Air Warfare Ctr. Weapons Div.
NAM	Naval Ammo Depot
NAV	Naval Avionics
NVE	Naval Engineering Center
NOS	Naval Oceans System Center
NOT	Naval Ordnance Test Center - China Lake
NPS	Naval Post Graduate School
NRL	Naval Research Lab
NUS	Naval Underwater Systems Center
NWC	Naval Weapons Center
NVC	Navcom Defense Electronics
NEJ	NEC (Japan)
NEA	NEC America, Inc.
NEC	Nemsclarke
NER	Nera
NEU	Neulink, Divn of Celltronics
NEB	NEUTEC
NAP	Nevada Air Products Co.
NMU	New Mexico State University
NMT	New Mexico Tech
NTD	New Tronics Division

NEW	Newton Co.
NET	Newtronics, Inc.
NEX	Nextel, Inc.
NEI	Nielson Electronics Division
NDC	Nihon Denki Co.
NIM	Nihon Musen Co.
NIE	Nippon Electronic Company Ltd.
NIN	Nissan
NIS	Nissin Electronics, Inc.
NIT	NITECH, Inc.
NRD	Norand Data System
NDS	Norand Data Systems, Inc.
NOD	Norden Division
NAH	North American Philips
NOR	Northeast Medal Industries
NOE	Northeastern Engineering Co.
NRE	Northern Electric Co., Ltd.
NRA	Northern Radio Co. or Northern Electronic Co.
NSL	Northern Scientific Laboratory
NTL	Northern Telecommunications, Inc.
NOC	Northrop Corp.
NSA	Northstar Electronics, Inc.
NST	Northstar Technologies
NIC	Northwest Instrument Co.
NOK	Novak Electronics
NOV	Nova-Tech/Avionics or Nova Tech Inc.
NUC	Nucomm
NUR	Nurad, Inc.
OAQ	OAQ Corp.
OAR	Ocean Applied Research Corp.
OCT	Octagon
OPD	Odetics Precision Time Division
ODM	Odom
OOS	Odom Offshore Survey
OKI	OKI Denki Co. or OKI Electric Industry Company, Ltd.
OAI	Oklahoma Aerotronics, Inc.
OKA	Oklahoma Electronics Co.
OSU	Oklahoma State University
OLS	Olson Radio Corp.
OME	Omera (France)
OMN	Omnitek
OTX	Omni-Tronix
OND	Oneida Electronics
OPS	Opos Electronics
OPE	Opseis
OPT	Optic Electronic Corp.
OPM	Opto-Mechnik
ORB	Orbit Electronics
OSC	Orbital Sciences Corp.
OSB	Oregon State Board of Forestry
OSH	Oregon State Highway Dept.
ORE	Oremco
OEC	Osborne Electronics Corp.
OUT	Ourercom Electronics Corp.

OTR	Outer Communication Co.
OZD	Ozalid Division
PGE	P.G. Electronics
PCC	Pace Communications Corp.
PAD	Pacific Advanced Engineering, Inc.
PAI	Pacific Aerosystem, Inc.
PCM	Pacific Communications
PCR	Pacific Crest Corp.
PEI	Pacific Engineering, Inc.
PMR	Pacific Missile Range Co.
PMT	Pacific Missile Test Center
PNL	Pacific Northwest Labs
PWI	Pacific World Industries
PAK	Packard Bell Electronics Corp.
PCE	Page Communications Engineers, Inc.
PAL	Palmer, B. Co.
PAA	Pan American Airways
PAN	Panronics Corp.
PSC	Paramax Systems Corp.
PRS	Parisi Antennas
PAE	Park Aire Electronics
PAR	Parsons Electronics
PRN	Parsons, Ralph M. Co.
PAZ	Parzen Research, Inc.
PAT	Patterson H. J.
PMC	Patterson Manufacturing Company, Inc.
PAU	Pauldon
PAV	PAVCO
PCL	PC Electronics
PEA	Pearce Simpson, Inc.
PEG	Peninsula Engineering Corp.
PFR	Perfection
PER	Perkin Elmer, Inc.
PFI	Pfitzner, Heinz
PHA	Phase IV Systems, Inc.
PHD	Phelps Dodge
PHI	Philco Corp.
PHC	Philco Corporation of Canada, Ltd.
PHL	Philips Gloeilampene Abreiken (Neth) or Philips Broadcast Equipment Corp.
PLP	Phillips Audio Visual Corp.
PHM	Philmore Manufacturing Co.
PSL	Physical Science Lab
PIC	P-I-C Communications, Inc.
PIS	Picattiny Arsenal
PBI	Pickard-Burns, Inc.
PIE	Piezo, Ltd.
PIA	Pinson Associates, Inc.
PAC	Piper Aircraft Corp. (Electronics Division)
PLC	Plectron Corp.
PLE	Plessey Company, Ltd. (UK)
PNH	PNH Electronics Co.
POE	Pointer Electronics
PRL	Polar Research Lab.
POL	Polarad Electronics Corp.

PLR	Polestar
AKO	Polyot Aviation and Space Association
PTA	Polytechnica
POX	Polytronics Communications or Pro-Line Electronics
POY	Polytronics Laboratories, Inc.
PRI	Polytronics Research, Inc.
POM	Pomije Electronics Co. or Palomar Instrument Co.
POC	Port-Com
POV	Port-O-Vox Corp.
PST	Power Systems Technology, Inc.
PED	Practical Engineering & Development Corp.
PRE	Premax Products Division
PMW	Premier Microwave Corp.
PRT	Pritchard Brown
PBR	Pro Brand International
PCO	Procom Corp.
PRO	Prodelin, Inc.
PFE	Professional Electronics
PCS	Proportional Control Systems
PTI	Protection Technology, Inc.
PRX	Proxim
PSI	Public Systems, Inc.
PUL	Pulse Engineering, Inc.
PYC	Pye Communications
PYA	Pye Corporation of America
PYE	Pyle Telecommunications, Ltd. (UK)
QUC	QALCOMM
QEI	QEI Corp.
QEN	Quadrant Engineering, Inc.
QUA	Qualimetrix Corp.
QUT	QUALI-TRON
QSC	Quanta System Corp.
QUE	QUE Enterprises, Inc.
QEL	Quest Electronics
QUI	Quintron Corp.
RAF	R&D Assoc. Electronics Navigation Industries, Inc.
MLR	R. A. Miller Industries
RFT	R. F. Technology
RJG	R. J. Gumm Co.
RAC	Racal Communications, Ltd.
RMI	Racal Decca Marine, Inc.
RAE	Racal Electronics, Ltd.
RAI	Racal Instruments, Ltd.
RCN	Racon, Inc.
RQM	Racon, Inc. Quality Microwave
RDA	Radair, Inc.
RAG	Radian Corp.
RAD	Radiation, Inc.
RCE	Radio Communications Equipment Engineering, Ltd. (Canada)
RCA	Radio Corporation of America
REL	Radio Electronics Laboratories
REN	Radio Engineering Laboratories
RFI	Radio Frequency Communications, Inc.

RHU	Radio Holland Group
RII	Radio Industries, Inc.
RDM	Radio Marine Corp.
RAP	Radio Plane Co.
RRC	Radio Receptor Co.
RRI	Radio Research Instrument Co.
RAS	Radio Shack
RDB	Radio Specialists Co.
ROM	Radio Specialties Mfg. Co.
RDS	Radio Specialty Co.
RSM	Radio Specialty Manufacturing
RSI	Radio Systems, Inc.
RTL	Radio Tel, Ltd.
RNS	Radionics
RAA	Rad-O-Lite
RFE	Rafael
RYC	Railway Communication, Inc.
RTN	Randtron Systems
RGC	Ranger Communications
RAN	Rantec Corp.
RAT	Ratelco, Inc.
RAU	Raulond-Borge Corp.
RAJ	Ray Jefferson Co.
RDN	Raydyne, Inc.
JRD	RAYJ
RAY	Raytheon Co. or Raytheon Manufacturing Co.
RCM	RC Manufacturing Co.
RCV	RCA Victor Company, Ltd.
REC	Reach Electronics Corp.
RIA	Reaction Institute, Inc.
REE	Reaction Instruments, Inc.
RLC	Realistic Co.
REA	Realtons Electronics, Inc.
ROC	Recon Optical, Inc.
RED	Redifon, Ltd.
REV	Reeves Instrument Corp.
RTK	REFTEK
REI	Regency Electronics, Inc.
RIZ	Rel, Inc.
REZ	Relco
RMC	Relm Communications, Inc.
REB	Remcon
REM	Remler Company, Ltd.
RMT	Remotec, Inc.
REO	Remtron
REP	Repco, Inc. or R.G.P. Co.
REF	Republic Electronics Films, Inc.
RSL	Resalab, Inc.
RES	Resdel Engineering Corp.
RML	Research in Motion, Ltd.
RET	Resonant Electronics
REX	Rex Bassett, Inc.
RFC	RF Communications Associates, Inc.
RFH	RF Harris Electronics
RFA	RF Solutions

RAB	RF Sound, Ltd.
RHG	RHG Electronics Laboratories
RRH	Richard R. Hayes
RCI	Richmond Communications, Inc.
REU	Ridge Electronics Corp.
RIT	Ritcon, Inc.
RTR	Ritron, Inc.
JAR	Robert A. Jones
RST	Robertson-Shipmate
ROB	Robinson Electronics
ROE	Robinson Engineering Co.
RIE	Rockwell International Electronics
RWC	Rockwell, Collins
ROD	Rodelco
ROS	Rohde Schwarz
RDC	Rome Air Development Center
REG	Ross Engineering
ROT	Rothenbuhler Engineering
ROW	Rowe Industries
ROX	Roxy Ofuna Electronics
ROY	Royal Electronics Corp.
ROL	Royal Exec
RSE	RS Electronics Corp.
RSS	RS Systems, Inc.
RUS	Rust Corp of America
RYA	Ryan Aeronautical Co.
RYU	Ryukyu Tsushinki Kogyo Co.
RCP	S&O RC Products
SAP	SA Philips Pty., Ltd.
SAB	SAAB
SAC	Sabre Communications Corp.
SAA	Safe Environmental Engineering
SAF	Safe Link Corp.
SFC	Safecom (Radionics)
SDI	Safety Devices, Inc.
SAG	Sage Laboratories
SAL	Salco Manufacturing Co.
SAM	Sampson Co.
SMT	Samson Technologies Corp.
SSG	Samsung Electronics, Ltd.
SEE	San Endiron General
SAN	Sanders Associates, Inc.
SAD	Sandia Corp.
STJ	Sanford Telecommunications Institute, Inc.
SBR	Santa Barbara Research Ctr.
SNT	Santec
SAT	Sarkes Tarzian, Inc.
SNF	Sarnoff David Research Center
SCG	Satcon GMBH
SLT	Satellite Transmission Systems, Inc.
SVI	Savi-Technology, Inc.
SCA	Scala Radio Corp.
SLI	Scanwell Laboratories, Inc.
SCH	Schuttig Atlantic

SCT	Science Applications International Technology, Inc.
SCI	Scientific Atlanta Co.
SCN	Scientific Communications
SRS	Scientific Radio Systems, Inc.
SCX	Scintrex, Ltd.
SCM	SCM Melabs, Inc.
SCO	Scope, Inc.
SRL	Scott EH Radio Laboratories, Inc.
SNI	Sea Marine International
SEB	Sea Tel, Inc.
SBE	Seaboard Electronics
SEP	Seaphone, Inc.
SEA	Sears Roebuck Co.
SEM	Seatron, Inc.
SEV	Seavey Engineering Corp.
SCC	Secode Corp.
SEK	Seiki Electronics, Inc.
SEI	Seiscor Manufacturing Co.
SES	Seismograph Service Corp.
SEL	Selenia S.P.A. (Italy)
SEO	SEMCO
SEN	Sennheiser Electronic Corp.
SNE	Senses International
SSN	Sensis Corp.
SSR	Sensor Systems
SNS	Senstar Corp.
SNL	Sentinel
SEX	Sentrax Perimeter Protection System
SIS	Sercel Industries Corp.
SDX	Serdex Corp.
SRV	Serv-Air, Inc.
STP	Serve-Tek Products, Inc.
SER	Servo Corp. of America
SET	Setchell Carlson, Inc.
SAQ	Sexant Anionique
SHD	Shadow Technology
SHA	Shakespeare
SHK	Shank Communication Co.
SHP	Shart Corp.
SLL	Shell Development Co.
SHI	Shiba Electric Co.
SHU	Shure Brothers, Inc.
SBA	Sideband Associates, Inc.
SBT	Sideband Technology, Inc.
SIH	Siemens-Halske
SID	Sierra Digital
SIE	Sierra Electronic Division of Philco
SMO	Sierra Misco
SRM	Sierra Monolithics, Inc.
SNC	Sierra Nevada Corp.
SRC	Sierra Research Corp.
SAS	Sigmas Antenna Systems
SIG	Signal Communications
SPP	Simmonds Precision Products, Inc.
SIM	Simpson Electronics

SLR	Sinclair Radio Laboratories
SGK	Singer Kearfott Co.
STH	Sintra-Thomson
SIP	Sippian Ocean Systems
SIT	SITCO
SIR	Sitra
SKN	Skanti
SKM	Skipper Marine Electronic
SKY	Skycrafters, Inc.
SKD	Skydata, Inc.
SKX	Skyphone Division
SKV	Skyvision
SRI	Skyway Radio, Inc.
SME	Smithroot Electronics
SMI	Smiths Industries, Inc.
SRA	Smythe Research Associates
SOL	Soladyne International, Inc.
SEG	Solartron Electronics Group, Ltd.
SOI	Solid State Technology
SON	Sonar Radio Corp.
SOE	Sonex, Inc.
SNK	Sonik Technologies, Inc.
SOY	Sony
SOU	Sound-Craft Systems, Inc.
SMD	South Midlands Communications, Ltd.
SOZ	Southcom International, Inc.
SOA	Southern Avionics
SMW	Southern California Microwave
SMC	Southern Marine Corporation
SMR	Southern Marine Research, Inc.
SWM	Southwest Microwave Co., Inc.
SWR	Southwest Research Institute
SWN	Southwestern
SAV	Space Avionics, Inc.
SDC	Space Data Corp.
SPE	Space Electronics
SPG	Space General
SML	Space Microwave Lab.
SOS	Space Ordinance Systems
SPC	Space Technical Laboratories
SLM	Spacelabs Medical
SPA	Spar Aerospace, Ltd.
SPT	Sparta Electronic Corp.
SPN	Sparton Electronics
SPF	SPC Technology, Divn. of Remier Industries
SPQ	Spears Associates
SCY	Specialized Control Systems
SPI	Specific Products, Inc.
SPX	Specifics Co.
SPM	Spectra Physics Co.
SPS	Spectra-Physics
SPL	Spectrolab, Inc.
SIN	Spectrum Communications, Inc.
SKL	Spencer Kennedy Laboratories
SPD	Sperry Corp.

SPR	Sperry Corp. or Servo Corporation of America
SRR	Sperry Flight Systems
SGC	Sperry Gyroscope Company of Canada, Ltd.
SPY	Sperry Gyroscope Company, Inc.
SPZ	Sperry Marine Systems
SPW	Sperry Piedmont Co.
SPK	Spike Technologies, Inc.
SIL	Spilsbury & Tindall
SRE	Sprengnether Equipment Co.
SAI	Springer Aircraft Radio Corp.
SQA	Square D Co.
SQU	Squires Sanders, Inc.
SRT	SR Telecom, Inc.
SIC	SRI International
STM	ST Microwave
STV	ST Research Corp.
STI	Stailes, Inc. or Star Lifeline, Ltd.
STB	Standard Communications
STS	Standard Electrica S.A.
STD	Standard Elektrik Lorenz
STA	Standard Electronics
SRD	Standard Radio and Telefon ABITT
STC	Standard Telephones-Cables, Ltd.
STQ	Stanford Research Institute
SFI	Stanford Telecommunications, Inc.
STF	Stanley Electronics Co.
SSC	States Steamship Co.
SCR	Steinbrecher Corporation
SSY	Stellar System
SIA	Stephens Engineering Associates, Inc.
STE	Stephenson
STL	Sterling Precision Corp.
STW	Stewart Warner Corporation of Canada, Ltd. STXSI-Tex Marine Electronics, Inc.
SAR	Stoddard Aircraft Radio Co.
STN	Stoner Electronics
STG	Stoner-Goral Communications Co.
STO	Storno Radio Co.
STU	Strand Engineering Co.
STR	Stromberg Carlson Products Co.
SGE	Strong Electronics
SEC	Struthers Electronics Corp.
SUM	Summers & Mills
SUC	Sun Chemical Corp.
SUN	Sunair Electronics, Inc.
SSI	Surface System, Inc.
SUR	Sur-Tec, Inc.
SUT	Sutron Co.
SVR	Svenska Radio
SWA	Swan Electronic Corp.
SWI	Swintek Cordless Microphone Co.
SYL	Sylvania Electronics Defense Laboratory or Sylvania Electronics Products
SMG	Symbol Technology, Inc.
SYM	Symetrics Engineering Corp.
SYX	Syndetix
SYN	Synergetics

SYA Syracuse Research Corp.
 SYC Syscon Corporation
 SPB System Planning Co.
 SYD Systems Dynamics
 SYE Systems Engineering & Management Corporation
 SYR Systems Research Laboratories, Inc.
 SYS Systron Donner Corp (Demornay Bonardi)

TAO Taco, Inc.
 T*SI Tactical Systems, Inc.
 TTT Tactical Technology, Inc.
 TAD TAD-American Corp.
 TIS Tadiran Israel Industries, Ltd.
 PTL TADS Development Labs, Inc.
 TAE Tait Electronics, Ltd.
 TAI Taiyo Musen Co.
 TAM Tamer Electronics, Inc.
 TAS Tasker or Tasker Industries
 TBN Tayburn
 TAY Taylor Electrical Instrument, Ltd.
 TCM TCOM Industries, Inc.
 TDS TDS Electronics Company, Ltd.
 TEE Teaberry Electronics Corp.
 TCH Techcomm
 TCD Techdyn Systems Corp.
 TAC Technical Appliance Corp.
 TAN Technical Associates of New Orleans
 THL Technical Electronics Co.
 TMC Technical Materiel Corp.
 TRC Technical Radio Corp.

E Technical Science
 T*SA Technical Systems Associates
 T*SD Technical Systems Division
 TES Technisonic Industries
 TAP Technology Applications
 TFC Technology for Communications, International
 TPL Technology Proprietary, Ltd.
 THY Technology Service Corp.
 TCN Technos International Corp.
 TCQ Techtest Lmt.
 TCP Tecom
 TKM TEK Mark Company
 TPI TEK Products, Inc.
 TEK Te-Ka-De Co.
 TEA Tek-Aid, Inc.
 TKK Tekk, Inc.
 TKL Teklogix, Inc.
 TCI Tel Com Industries
 TIE Tel Instrument Electronics
 TEG Telautograph Corp.
 TEB Telco
 TCC Telcom Communications
 TED Teldex
 TEH Telechrome

TCE	Telecommunications Corp.
TDI	TeleDesign
TDY	Tele-Dynamics
TII	Teledyne Industries, Inc.
TDE	Teledyne Ryan Electronics
T*SC	Teledyne Systems Co.
TDC	Teledyne T/M Co.
TLF	Telefunken Gmbh.
TEM	Telemet Co.
T*SY	Telemetry Systems, Inc.
TLM	Telemobile, Inc.
TEO	Telemotive
TLE	Telemus Electronics Systems, Inc.
TEJ	Telephone Engineering Corp.
TLP	Telephonic Corp.
TT*S	Telesciences Transmission System, Inc.
TLS	Tele-Signal Corp.
T*SS	Telesystems, Inc.
TEN	Teletronix Engineering Co.
TIA	Television Technology Corp.
TTI	Television Transmission, Inc.
TLX	Telex Co.
TIN	Telinstrument Co.
TLK	Telkoor
TLR	Telline Radio
TFD	Telludift
TLA	Telonica Corp.
TNS	Telonics
TEL	Telrex Laboratories
TTX	Teltrol Corp.
TDT	Teludisc, Inc.
TRO	Telurometer Corp.
TEC	Telviso Electronics
TXC	Telxon Corporation
TCO	Temco Aerosystems
TME	Temec Corp.
TEQ	Tenna Corp.
TEP	Tepco Corp.
TMR	Terma Elektronik
TER	Terra-Com
TEI	Texas Instrument, Inc.
TXS	Texscan Instruments
TEX	Textran Division
TXA	Textron Defense Systems
THI	Thiokol Chemical Corp.
THO	Thomas Mold-Die Co.
THC	Thomson CSF
TOH	Thomson-Houston (France)
THE	Thorn EMI Electronics, Inc.
THN	Thorn Microwave Devices
TAT	Thrane & Thrane
DBM	Three DBM Systems
TDL	Tidelands
TFT	Time & Frequency Tech., Inc.
TTN	Titan Severe Environment Systems

TTC	Titian Corp.
TMD	TMC Systems & Power Corp. or Telemotive Division of Dynascan
TML	TMC, Ltd.
TKA	Tokai Communication Corp.
TKS	Tokyo Keiki Co.
TOK	Tokyo Shibaura Electronics Co.
TOM	Tomcor
TMP	TOMOCO Electronics PYT LTD
TOP	Topp Manufacturing Co.
TOS	Toshiba Co.
TOA	Townsend Associates
TOY	Toycon
TRI	Tracor, Inc.
TRD	Traid Corp.
TRM	Tram/Diamond Corp.
TRN	Tran-Com
TRS	Tran-Crypt
TRT	Trans Texas
TRB	Trans World Communications, Inc.
TCT	Transidtronic
T*SB	Transcience
TRA	Transco Products, Inc.
TIL	Transcript International
TRQ	Transformation Techniques, Inc.
TTQ	Transformation Techniques, Inc.
TRE	Transmitter Equipment Manufacturing Co.
TRR	Transworld
TRZ	Travelers Information Services, Inc.
TRF	TRF Company
TRP	Tri-Com, Inc.
TDA	Tridea Electric Corp.
TRL	Trilectic Co.
TBL	Trimble Navigation
TCL	Trio Communications, Ltd.
TKC	Trio-Kenwood Communications
TIV	Trivec-Avent
TTK	Tron-Tek, Inc.
TLC	TRT Groupe
TRU	Truetime
TRW	TRW Electronics
TRY	Trylon, Inc.
TUL	Tull Aviation Corp.
TUR	Turner Aircraft Radio, Inc.
TYC	Tycho-Tech
UEC	U.S. Army Electronics Command
USM	U.S. Metal Products Co.
UNN	Unicom
UDN	Uniden
UNM	Unimetries, Inc.
UNS	Unisys Corp.
UTE	Unitec
UED	United Electro Dynamics, Inc.
USL	United Scientific Laboratory
UNC	United States Navguide Corp.

UNT	United Telecontrol
UFI	Uniten/Force, Inc.
LCA	Univ. of Lowell Ctr. for Atmospheric Research
UNI	Univac Corp.
UNA	Universal Navigation Corporation
UDE	University of Denver
UIL	University of Illinois
UMI	University of Miami
USE	Use Corporation
UAF	USN Avionics Facility
UTI	Utica Communications
UTC	Utilicom, Inc.
UTL	UTL Corp.

VAI	Vaisala
VAL	Valcom, Ltd.
VFR	Valley Forge Research Center
VAN	Van Norman Industries, Inc.
VNG	Vanguard Med Products Co.
VRD	Varda Company
VAR	Varian Associates
VRO	Varo, Inc.
VUA	Vector Division of United Aircraft
VEC	Vector Manufacture Co.
VTC	Vectran Corp.
VEG	Vega Electronics Corp.
VSC	Ventana Sciences, Inc.
VEN	Ventron Electronics Corp.
VIF	Verifone, Inc.
VER	Versa-Count
VEX	Vertex Communications Corp.
VHF	VHF Engineering Co.
VSI	Viable Systems, Inc.
VST	Viasat Technologies Co.
VAT	Viatec
VIN	Vicon Industries, Inc.
VIC	Victor RF-Microwave Co.
VIA	Victoreen Instrument Co.
VDC	Video Consultants
VMI	Video Methods, Inc.
VID	Vidor Scientific, Inc.
VIX	Vista Manufacturing Co.
VEP	Visual Electronics Corp.
VIS	Visual Manufacturing Division
VIL	Vitel
VIT	Vitro Electronics
VIZ	VIZ Corp.
VOC	Vocaline Company of America
VOU	Vought Corp.

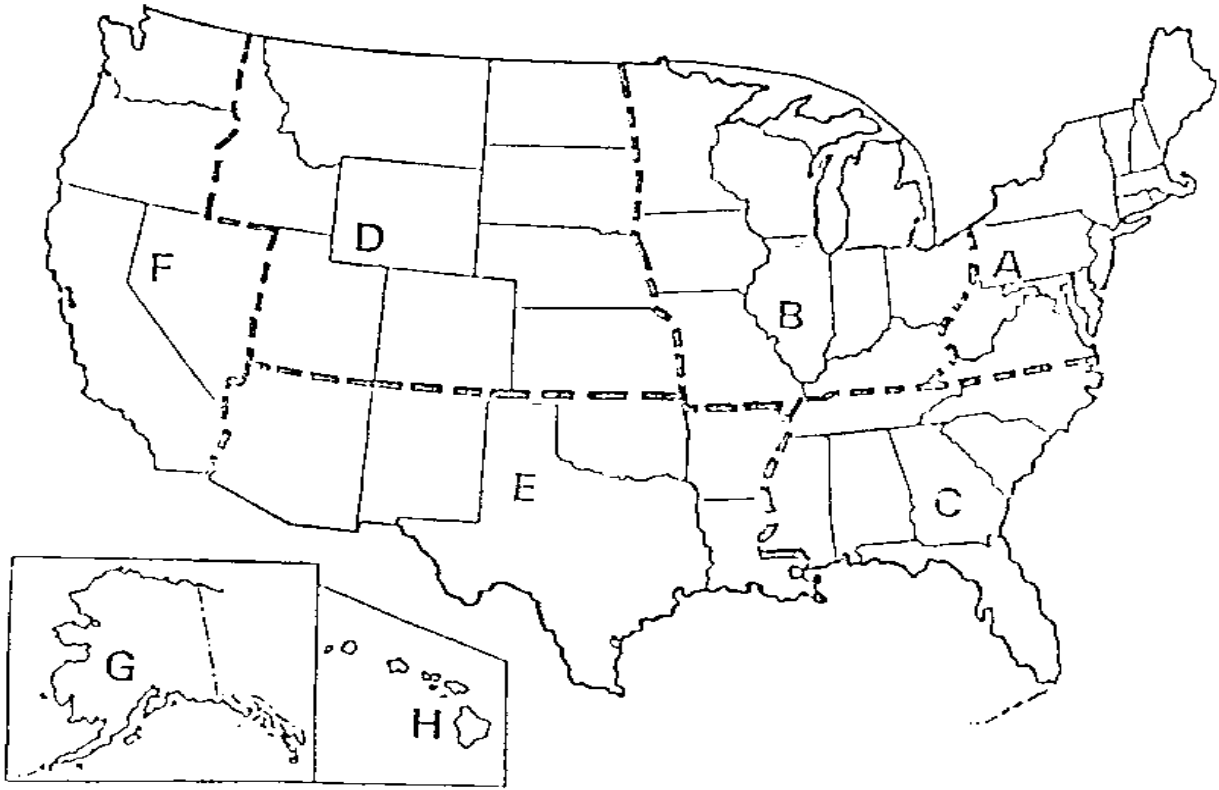
WSD	W.S. Deans Co.
WAD	Waddell Dynamics
WAL	Walco Electronic Co.
WGT	Wandel and Golterman
WEI	Ward Electronic Industries

WAA	Washington Aluminum Co.
WAS	Washington State Patrol
WAT	Washington Technological Assn., Inc
WJO	Watkins Johnson Co.
WAE	Waveband Electronics
WAG	Waveguide
WAV	Wavetek
WVT	Wavetronics, Inc.
WMC	Weather Measure Corp.
WCI	Webcor, Inc.
WGC	Webster Green Co.
WEB	Webster Manufacturing Co.
WBL	Weibel Scientific, Inc.
WET	Weight-Tronics
WEL	Well Sentry, Inc.
WEM	Wems, Inc.
WMI	Wescom Microwave, Inc.
WTB	West Bend
WBA	West Bend Autotronics, Inc.
WEC	Western Electric Company, Inc.
WMX	Western Multiplex Corporation
WRC	Western Radio Communications Corp.
WSM	Western Space and Marine
WEU	Western Union Telegraph Co. or Western Union
WDC	Westin Data Comms
WAB	Westinghouse Air Brake Co.
WES	Westinghouse Electric Co.
WST	Westrex Corp.(Division Litton Systems)
WHE	Whelen
WHM	Whistler Marine, Inc.
WHI	White J.L. Co.
WHT	Whittaker Corp.
WIC	Wicks Industries
WIH	Wightman Electronics, Inc.
WIL	Wilcox Electric Corp.
WIG	Wilcox Gay Corp.
WMN	Wildlife Materials, Inc.
WIK	Wilkinson Electronics, Inc.
WLC	Wilson Electronic Corp.
WIN	Wind Data
WTC	Wind Turbine Co.
WIT	Winnet, Inc.
WED	Winston Electronics Division
WSI	Wireless Sound, Inc.
WTI	Wireless Technology, Inc.
WOD	Wood and Douglas
WOO	Wood-IVY Systems, Inc.
WOR	Workshop Associates
WOE	World Engines
WRL	World Radio Laboratories
WOL	World Radio, Ltd.
WUL	Wulfsberg Electronics
WYM	Wyman Research, Inc.
WBI	Wyoming Biotelemetry, Inc.

XRX	Xerox Corp., Electro Optical Systems
XTR	Xetron Corp.
YEA	Yaesu
YDI	Yarnell Data, Inc.
ZEL	Zellweger Telecommunications
ZEN	Zenith Radio Corp.
ZEP	Zephyrus
ZET	Zeta Laboratories

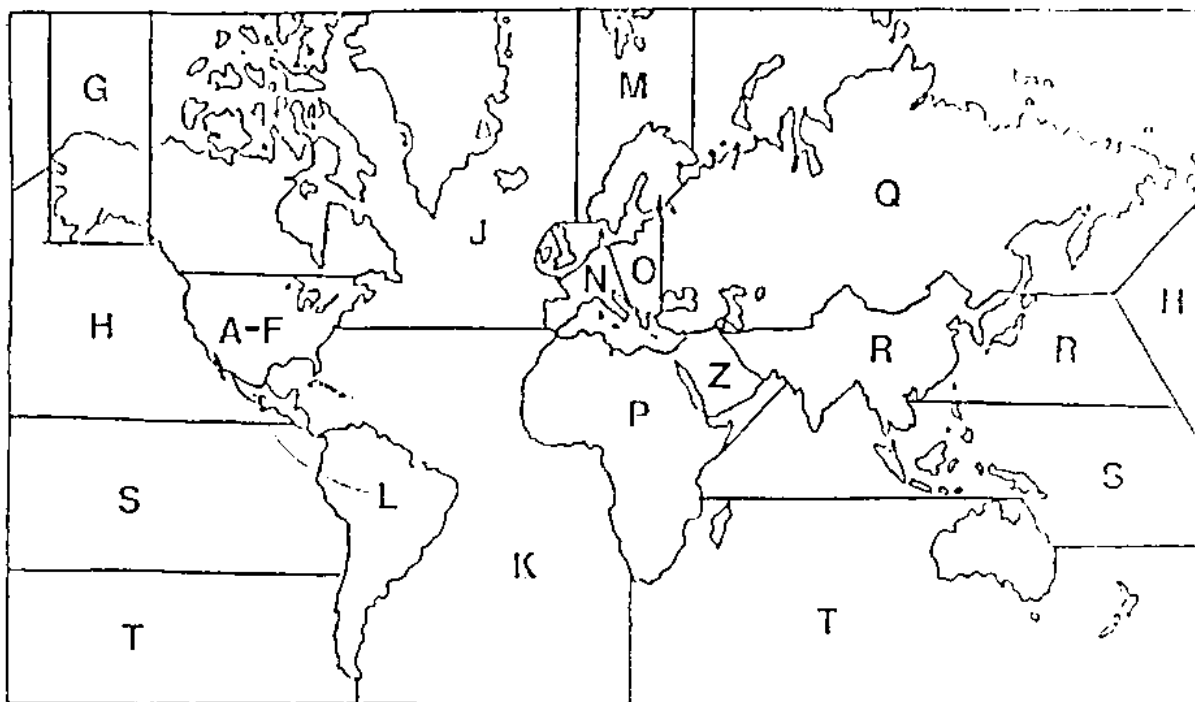
ANNEX E - JSC MINOR AREA CODES

1. The following minor area codes are used in Data Items 373 and 473 to speed up certain selects for data outputs. This annex is organized to graphically display the minor area codes in figures 1 and 2. There are two listings sorted first by minor area code (subparagraph a) and secondly by state/country (subparagraph b).



CONUS 48 States/DC = Y

Figure A-E-1. JSC Area Codes (USA)



Note: Antarctica = L
 Worldwide = U
 Space = V
 CONUS 48 states and DC = Y
 Miscellaneous = X

Figure A-E-2 JSC Area Codes World

a. This paragraph is sorted by the minor area code.

CHESAPEAKE BAY	A	SOUTH DAKOTA	D	
CONNECTICUT	A	UTAH	D	
DELAWARE	A	WYOMING	D	
DISTRICT OF COLUMBIA	A			
FIRST NAV DISTRICT	A	ARIZONA	E	
LAKE ONTARIO	A	ARKANSAS	E	
MAINE	A	EIGHTH NAV DIST	E	
MARYLAND	A	LOUISIANA	E	E
MASSACHUSETTS	A	NEW MEXICO	E	
NAV DIST WASH DC	A	OKLAHOMA	E	
NEW YORK	A	SW REGION CAP 6	E	
NEW HAMPSHIRE	A	TEXAS	E	
NEW JERSEY	A			
PENNSYLVANIA	A	CALIFORNIA	F	
RHODE ISLAND	A	NEVADA	F	
THIRD NAV DISTRICT	A	OREGON	F	
VERMONT	A	PAC REGION CAP 8	F	
VIRGINIA	A	WASHINGTON	F	
WEST VIRGINIA	A			
		ALASKA	G	
GREAT LAKES	B	PACIFIC OCEAN NE	G	
ILLINOIS	B			
INDIANA	B	ALASKA ALEUTIAN IS	H	
IOWA	B	BERING SEA	H	
KENTUCKY		FOURTEENTH NAV DIS	H B	
LAKE ERIE	B	HAWAII	H	
LAKE SUPERIOR	B	JOHNSTON ISLAND	H	
LAKE HURON	B	MIDWAY ISLAND		H
LAKE MICHIGAN	B	PACIFIC OCEAN NW	H	
MICHIGAN	B			
MINNESOTA	B	ATLANTIC OCEAN NW	J	
MISSOURI	B	AZORES	J	
OHIO	B	CANADA	J	
WISCONSIN	B	FAEROES ISLANDES	J	
		GREENLAND	J	
ALABAMA	C	HUDSON BAY	J	
FLORIDA	C	ICELAND	J	
GEORGIA	C	JAN MAYEN	J	
MISSISSIPPI	C	S. PIERRE/MIQUELON	J	
NORTH CAROLINA	C			
SIXTH NAV DISTRICT	C	ANGUILLA	K	
SOUTH CAROLINA	C	ANTIGUA/BARBUDA	K	
TENNESSEE	C	ARUBA	K	
		ASCENSION	K	
COLORADO	D	ATLANTIC OCEAN WC	K	
IDAHO	D	BAHAMAS	K	
KANSAS	D	BARBADOS		K
MONTANA	D	BERMUDA	K	
NEBRASKA	D	BRIT WEST INDIES	K	
NORTH DAKOTA	D	CANARIES	K	
RCKY MTN RGN. CAP 7	D	CAPE VERDE ISLAND	K	

CARIBBEAN	K	SOUTH AMERICA	
CAYMAN ISLAND	K	SURINAM REP OF	
CUBA	K	SW ATLANTIC OCEAN	L
DOMINICA	K	URUGUAY REPUBLIC	L
DOMINICAN REPUBLIC	K	VENEZUELA REPUBLIC	L
FALKLAND ISLANDS	K		
FIFTEENTH NAV DIST	K	BALTIC SEA	M
GRENADA	K	FINLAND	M
GUADELOUPE F DEPT	K	NORWAY	M
GULF OF MEXICO	K	NORWEGIAN SEA	M
HAITI REPUBLIC	K	SPITSBERGEN	M
JAMAICA	K	SWEDEN	M
LESSER ANTILLES	K		
MADEIRA	K	AEGEAN SEA	N
MARTINIQUE F DEPT	K	ANDORRA	N
MONTSERRAT	K	ATLANTIC OCEAN NE	N
NETHERLND ANTILLES	K	AUSTRIA	N
PANAMA CANAL ZONE	K	BELGIUM	N
PUERTO RICO	K	BERLIN WEST	N
S. TOME/PRINCIPE	K	CORSICA	N
S. HELENA	K	CRETE	N
SAINT LUCIA	K	CYPRUS REPUBLIC	N
ST CRISTOPH/NEVIS	K	DENMARK	N
ST VINCENT/GRENADIN	K	ENGLISH CHANNEL	N
SWAN ISLAND	K	EUROPE	N
TENTH NAV DISTRICT	K	FRANCE	N
TRINIDAD/TOBAGO	K	GERMANY	N
TRISTAN DA CUNHA	K	GIBRALTAR	N
TURKS/CAICOS IS.	K	GREECE	N
VIRGIN IS BR. (ITU)	K	IRELAND	N
VIRGIN IS US (ITU)	K	ITALY	N
VIRGIN ISLANDS	K	LIECHTENSTEIN	N
		LUXEMBOURG	N
ANTARTICA	L	MALTA	N
ARGENTINE REPUBLIC	L	MEDITERRANEAN SEA	N
BOLIVIA	L	MEDITERRANEAN-EAST	N
BRAZIL		MEDITERRANEAN-WEST	N L
CENTRAL AMERICA	L	MONACO	N
CHILE (EX EASTER I)	L	NATO EUROPE ALL	N
COLUMBIA REPUBLIC	L	NETHERLANDS KINGDM	N
COSTA RICA	L	NORTH SEA	N
ECUADOR	L	PORTUGAL	N
EL SALVADOR REP.	L	SARDINIA	N
GUATEMALA	L	SICILY	N
GUYANA	L	SPAIN	N
GUYANA (FRENCH)	L	SWITZERLAND CONFED	N
HONDURAS REPUBLIC	L	TURKEY	N
LATIN AMERICA	L	UK GREAT BRITAIN	N
MEXICO	L	VATICAN CITY STATE	N
NICARAGUA	L		
PACIFIC OCEAN SE	L	ALBANIA REPUBLIC	O
PANAMA REPUBLIC	L	BOSNIA AND HERZEGOVINA	O
PARAGUAY	L	BULGARIA PEO REPUB	O
PERU	L	CROATIA	O

CZECHOSLOVAKIA	O	SYRIAN ARAB REP.	P
HUNGARIAN REPUBLIC	O	TANZANIA REPUBLIC	P
MACEDONIA	O	TANZANIA (ITU)	P
POLAND PEO REPUBLI	O	TANZANIA (ZANZIBAR)	P
ROUMANIA SOCLT REP	O	TOGOLESE REPUBLIC	P
SERBIA AND MONTENEGRO	O	TUNISIA	P
SLOVAKIA	O	UGANDA	P
SLOVENIA	O	UN TRUCE SUPER JER	P
YOGOSLAVIA	O	ZAIRE	P
		ZAIRE	P
AFRICA	P	ZAMBIA REPUBLIC	P
ALGERIA	P	ZIMBABWE (REP. OF)	P
ANGOLA	P		
ATLANTIC OCEAN SE	P	BYELORUSSIAN SSR	Q
BENIN	P	MONGOLIAN REPUBLIC	Q
BHUTAN (ITU)	P	UKRAINIAN SSR	Q
BOTSWANA	P	USSR	Q
BURKINA FASO	P		
BURUNDI KINGDOM	P	CHINA	R
CAMEROON REPUBLIC	P	HONG KONG	R
CENTRL AFRICAN REP	P	JAPAN	R
CHAD	P	KOREA (PEOPLES REP.)	R
CONGO PEO REPUBLIC	P	KOREA REPUBLIC	R
EQUATORIAL GUINEA	P	MACAO	R
GABON REPUBLIC	P	SOUTH CHINA SEA	R
GAMBIA (BATHURST)	P		
GHANA		AMERICAN SAMOA	S P
GUINEA REPUBLIC	P	ASIA SOUTH	S
GUINES-BISSAU	P	ASIA SOUTHEAST	S
ISRAEL (STATE OF)	P	ASIA	S
IVORY COAST REPUB	P	BANGLADESH	S
LEBANON	P	BHUTAN	S
LESOTHO KINGDOM OF	P	BRUNEI	S
LIBERIA REPUBLIC	P	BURMA (UNION CF)	S
LIBYAN ARAB REPUB	P	CAROLINE ISLANDS	S
MADAGASCAR DEM REP	P	CELEBES SEA	S
MALAWI	P	CHAGOS ARCHIPELAGO	S
MALI REPUBLIC	P	CHRISTMAS I INDO	S
MARION ISLAND	P	CHRISTMAS I (PAC)	S
MAURITANIA (REP. OF)	P	COMORO ISLAND	S
MAYOTTE ISLAND	P	COOK ISLANDS	S
MOROCCO (KINGDOM OF)	P	COOK ISLANDS (NORTH)	S
MOZAMBIQUE	P	EASTER I (CHILE)	S
NIGER (REPUBLIC OF)	P	FIJI ISLANDS	S
NIGERIA (REPUBLIC OF)	P	FRENCH POLYNESIA	S
RODRIGUEZ	P	GUAM	S
RWANDA REPUBLIC	P	HOWLAND ISLAND	S
SAN MARINO (ITU)	P	INDIA REPUBLIC OF	S
SENEGAL REPUBLIC	P	INDONESIA REPUBLIC	S
SIERRA LEONE	P	JAMMU AND KASHMIR	S
SO AFRICA REPUBLIC	P	JARVIS ISLAND	S
SP TER NE MOROCCO	P	KHMER REPUBLIC	S
SPANISH SAHARIAN T	P	KIRIBATI	S
SWAZILAND KINGDOM	P	LAOS KINGDOM	S

MALAYSIA	S	WORLDWIDE	U	
MALDIVES REPUBLIC	S			
MARIANA IS (EX GUM)	S	USP (US AND POSS)	V	
MARSHALL ISLANDS	S			
MICRONESIA FED ST	S	SPACEGEOSTATIONARY	W	
NAURU ISLANDS	S			
NEPAL	S	ALL	X	
NETHLANDS N GU	S	ARABIAN SEA	X	
NEW GUINES TERR	S	ARCTIC OCEAN	X	
NEW CALEDONIA	S	ATLANTIC NORTH	X	
NIUE ISLAND	S	ATLANTIC EAST	X	
OCEANIA	S	ATLANTIC OCEAN	X	
PALAU REPUBLIC OF	S	CANADIAN OCEAN STA	X	
PALMYRA ISLAND	S	CLASSIFIED LOCATIN	X	
PAPUA (TERRITORY OF)	S	COMM SPCE-RUSSIA	X	
PAPUA NEW GUINEA	S	COMM SPCE-USA		
PARACEL ISLANDS	S	COMM SPCE-CANADA	X	
PHILLIPPINES REP.	S	COMM SPCE-RUSSIA	X	
PHOENIX ISLANDS	S	COMM SPCE-FRANCE	X	
PITCAIRN ISLAND	S	COMM SPCE-BELGIUM	X	
PORTUGUESE TIMOR	S	COMM SPCE-RUSSIA	X	
SIKKIM	S	COMM SPCE-USA		
SINGAPORE REPUBLIC	S	COMMON USE (ITU)	X	
SOLOMON ISLANDS	S	ELEVENTH NAV DIST	X	
SRI LANKA (CEYLON)	S	FAR EAST	X	
SW PACIFIC OCEAN	S	FIFTH NAV DISTRICT	X	
SYCHELLES	S	FOURTH NAV DIST	X	
THAILAND	S	GT LKS REGION CAP 3	X	
TOKELAU ISLANDS	S	INTELSAT	X	
TONGA KINGDOM	S	INTELSAT	X	
TRUST TERRITORIES	S	INTELSAT	X	
TUVALU	S	INTELSAT	X	
UN MAG INDIA PAK	S	INTER-SHIP (ITU)	X	
VANUATA (REP. OF)	S	INTERNAT WTRS	X	
VIET-NAM NORTH	S	MID E REGION CAP 2	X	
VIET-NAM SOUTH	S	MISSISSIPPI W OF		X
WAKE ISLAND	S	MISSISSIPPI E OF	X	
WALLIS/FUTANA ISLS	S	N CE REGION CAP 5	X	
WESTERN SAMOA	S	NAMIBIA	X	
		NATO COUNTRIES ALL	X	
ADELIE LAND	T	NE REGION CAP 1	X	
AUSTRALIA COMMWLTH	T	NINTH NAV DIST	X	
COCOS KEELING IS	T	NORTH AMERICA	X	
CROZET ARCHIPELAGO	T	ORBITAL FLIGHT		X
GB INDO TERRITORY	T	PACIFIC OCEAN	X	
INDIAN OCEAN	T	PACIFIC NORTH	X	
KERGUELEN ISLANDS	T	RECEIVE ONLY RECRD	X	
MAURITIUS	T	SE REGION CAP 4		X
NEW ZEALAND	T	SPACE SYSTEM	X	
REUNION (FRENCH)	T	SPCE RES-FRANCE	X	
ST PAUL AMSTERDAM	T	SPCE MET-USA	X	
		SPCE RES-FRANCE	X	
SPACENON-GEOSTTNR	U	SPCE MET-USA	X	
WORLD WIDE AREA	U	SPCE RES-USA	X	

SPCE RES-USA	X		
SPCE RES-USA	X	ADEN	Z
SPCE RES-SWEDEN	X	AFARS/ISSAS (FRENCH)	Z
SPCE RES-CANADA	X	AFGHANISTAN	Z
SPCE RES-JAPAN	X	ASIA SOUTHWEST	Z
SPCE RES-JAPAN	X	BAHRAIN, STATE OF	Z
SPCE RES-GERMANY	X	BELIZE	Z
SPCE RES-GERMANY	X	DJIBOUTI	Z
SPCE RES-FRANCE	X	EGYPT ARAB REPUBLI	Z
SPCE RES-FRANCE	X	ETHIOPIA	Z
SPCE RES-FRANCE	X	IRAN	Z
SPCE MET-FRANCE	X	IRAQ REPUBLIC	Z
SPCE RES-FRANCE	X	JORDAN (KINGDOM OF)	Z
SPCE RES-FRANCE	X	KENYA	Z
SPCE RES-FRANCE	X	KUWAIT (STATE OF)	Z
SPCE MET-RUSSIA	X	MIDDLE EAST	Z
SPCE RADNAV-USA	X	OMAN (MUSCAT/OMAN)	Z
SPCE RES-FR/GERMANY	X	PAKISTAN	Z
SPCE RES-CANADA	X	PERSIAN GULF	Z
THIRTEENTH NAV DIS	X	QATAR	Z
TWELTH NAV DIST	X	RED SEA	Z
UK STA IN REGION 1	X	SAUDI ARABIA KINGD	Z
UK STA IN REGION 2	X	SOMALI DEM REPUBLI	Z
UK STA IN REGION 3	X	SOMALILAND (FRENCH)	Z
US POSSESSIONS ONLY	X	SOMALILAND (BRITISH)	Z
US OCEAN STATION	X	SUDAN REPUBLIC	Z
US (50 STATES-DC)	X	SULTANTATE OF OMAN	Z
WRLD WIDE RESTRICT	X	TRUCIAL STATES	
		UN ARAB EMPIRATES	Z
CONTINENTAL US	Y	YEMEN ARAB REPUBLI	Z
CONUS 48 STATES DC	Y	YEMEN (PEO DEM REP)	Z

b. This paragraph is sorted by the state/country name.

ADELIE LAND	T	BHUTAN (ITU)	P
ADEN	Z	BOLIVA	L
AEGEAN SEA	N	BOSNIA AND HERZEGOVINA	O
AFARS/ISSAS (FRENCH)	Z	BOTSWANA	P
AFGHANISTAN	Z	BRAZIL	L
AFRICA		BRIT WEST INDIES	K P
ALABAMA	C	BRUNEI	S
ALASKA	G	BULGARIA PEO REPUB	O
ALASKA ALEUTIAN IS	H	BURKINA FASO	P
ALASKA MAIN LAND	G	BURMA (UNION CF)	S
ALBANIA REPUBLIC	O	BURUNDI KINGDOM	P
ALGERIA	P	BYELORUSSIAN SSR	Q
ALL	X	CALIFORNIA	F
AMERICAN SAMOA	S	CAMEROON REPUBLIC	P
ANDORRA	N	CANADA	J
ANGOLA	P	CANADA EAST COAST	J
ANGUILLA	K	CANADA EASTCENTRAL	J
ANTARTICA	L	CANADA NORTHEAST	J
ANTIGUA/BARBUDA	K	CANADA NORTHWEST	J
ARABIAN SEA	X	CANADA SOUTHWEST	J
ARCTIC OCEAN	X	CANADIAN OCEAN STA	X
ARGENTINE REPUBLIC	L	CANARIES	K
ARIZONA	E	CAPE VERDE ISLAND	K
ARKANSAS	E	CARIBBEAN	K
ARUBA	K	CAROLINE ISLANDS	S
ASCENSION	K	CAYMAN ISLAND	K
ASIA	S	CELEBES SEA	S
ASIA SOUTH	S	CENTRAL AMERICA	L
ASIA SOUTHEAST	S	CENTRL AFRICAN REP	P
ASIA SOUTHWEST	Z	CHAD	P
ATLANTIC EAST	X	CHAGOS ARCHIPELAGO	S
ATLANTIC NORTH	X	CHESAPEAKE BAY	A
ATLANTIC OCEAN SE	P	CHILE (EX EASTER I)	L
ATLANTIC OCEAN	X	CHINA	R
ATLANTIC OCEAN NE	N	CHRISTMAS I (PAC)	S
ATLANTIC OCEAN NW	J	CHRISTMAS I INDO	S
ATLANTIC OCEAN WC	K	CLASSIFIED LOCATIN	X
AUSTRALIA COMMWLTH	T	COCOS KEELING IS	T
AUSTRIA	N	COLORADO	D
AZORES	J	COLUMBIA REPUBLIC	L
BAHAMAS	K	COMM SPCE-BELGIUM	X
BAHRAIN, STATE OF	Z	COMM SPCE-CANADA	X
BALTIC SEA	M	COMM SPCE-FRANCE	X
BANGLADESH	S	COMM SPCE-RUSSIA	X
BARBADOS		COMM SPCE-RUSSIA	X K
BELGIUM	N	COMM SPCE-RUSSIA	X
BELIZE	Z	COMM SPCE-USA	X
BENIN	P	COMM SPCE-USA	X
BERING SEA	H	COMMON USE (ITU)	X
BERLIN WEST	N	COMORO ISLAND	S
BERMUDA	K	CONGO PEO REPUBLIC	P
BHUTAN	S	CONNECTICUT	A

CONTINENTAL US	Y	GUAM	S
CONUS 48 STATES DC	Y	GUATEMALA	L
COOK ISLANDS	S	GUINEA REPUBLIC	P
COOK ISLANDS (NORTH)	S	GUINES-BISSAU	P
CORSICA	N	GULF OF MEXICO	K
COSTA RICA	L	GUYANA	L
CRETE	N	GUYANA (FRENCH)	L
CROATIA	O	HAITI REPUBLIC	K
CROZET ARCHIPELAGO	T	HAWAII	H
CUBA	K	HAWAII (ITU)	H
CYPRUS REPUBLIC	N	HONDORAS REPUBLIC	L
CZECHOSLOVAKIA	O	HONG KONG	R
DELAWARE	A	HOWLAND ISLAND	S
DENMARK	N	HUDSON BAY	J
DISTRICT OF COLUMBIA	A	HUNGARIAN REPUBLIC	O
DJIBOUTI	Z	ICELAND	J
DOMINICA	K	IDAHO	D
DOMINICAN REPUBLIC	K	ILLINOIS	B
EASTER I (CHILE)		INDIA REPUBLIC OF	S S
ECUADOR	L	INDIAN OCEAN	T
EGYPT ARAB REPUBLI	Z	INDIANA	B
EIGHTH NAV DIST	E	INDONESIA REPUBLIC	S
EL SALVADOR REP.	L	INTELSAT	X
ELEVENTH NAV DIST	X	INTELSAT	X
ENGLISH CHANNEL	N	INTELSAT	X
EQUATORIAL GUINEA	P	INTELSAT	X
ETHIOPIA	Z	INTER-SHIP (ITU)	X
EUROPE	N	INTERNAT WTRS	X
FAEROES ISLANDES	J	IOWA	B
FALKLAND ISLANDS	K	IRAN	Z
FAR EAST	X	IRAQ REPUBLIC	Z
FIFTEENTH NAV DIST	K	IRELAND	N
FIFTH NAV DISTRICT	X	ISRAEL (STATE OF)	P
FIJI ISLANDS	S	ITALY	N
FINLAND	M	IVORY COAST REPUB	P
FIRST NAV DISTRICT	A	JAMAICA	K
FLORIDA	C	JAMMU AND KASHMIR	S
FOURTEENTH NAV DIS	H	JAN MAYEN	J
FOURTH NAV DIST	X	JAPAN	R
FRANCE	N	JARVIS ISLAND	S
FRENCH POLYNESIA	S	JOHNSTON ISLAND	H
GABON REPUBLIC	P	JORDAN (KINGDOM OF)	Z
GAMBIA (BATHURST)	P	KANSAS	D
GB INDO TERRITORY	T	KENTUCKY	B
GEORGIA	C	KENYA	Z
GERMANY	N	KERGUELEN ISLANDS	T
GHANA		KHMER REPUBLIC	S P
GIBRALTAR	N	KIRIBATI	S
GREAT LAKES	B	KOREA REPUBLIC	R
GREECE	N	KOREA (PEOPLES REP.)	R
GREENLAND	J	KUWAIT (STATE OF)	Z
GRENADA	K	LAKE ERIE	B
GT LKS REGION CAP 3	X	LAKE HURON	B
GUADELOUPE F DEPT	K	LAKE MICHIGAN	B

LAKE ONTARIO	A	NATO EUROPE ALL	N
LAKE SUPERIOR	B	NAURU ISLANDS	S
LAOS KINGDOM	S	NAV DIST WASH DC	A
LATIN AMERICA	L	NE REGION CAP 1	X
LEBANON	P	NEBRASKA	D
LESOTHO KINGDOM OF	P	NEPAL	S
LESSER ANTILLES	K	NETHERLANDS KINGDM	N
LIBERIA REPUBLIC	P	NETHERLND ANTILLES	K
LIBYAN ARAB REPUB	P	NETHLANDS N GU	S
LIECHTENSTEIN	N	NEVADA	F
LOUISIANA	E	NEW CALEDONIA	S
LUXEMBOURG	N	NEW GUINES TERR	S
MACAO	R	NEW HAMSPHIRE	A
MACEDONIA	O	NEW JERSEY	A
MADAGASCAR DEM REP	P	NEW MEXICO	E
MADEIRA	K	NEW YORK	A
MAINE	A	NEW ZEALAND	T
MALAWI	P	NICARAGUA	L
MALAYSIA	S	NIGER (REPUBLIC OF)	P
MALDIVES REPUBLIC	S	NIGERIA (REPUBLIC OF)	P
MALI REPUBLIC	P	NINTH NAV DIST	X
MALTA	N	NIUE ISLAND	S
MARIANA IS (EX GUM)	S	NORTH AMERICA	X
MARION ISLAND	P	NORTH CAROLINA	C
MARSHALL ISLANDS	S	NORTH DAKOTA	D
MARTINIQUE F DEPT	K	NORTH SEA	N
MARYLAND	A	NORWAY	M
MASSACHUSETTS	A	NORWEGIAN SEA	M
MAURITANIA (REP. OF)	P	OCEANIA	S
MAURITIUS	T	OHIO	B
MAYOTTE ISLAND	P	OKLAHOMA	E
MEDITERRANEAN SEA	N	OMAN (MUSCAT/OMAN)	Z
MEDITERRANEAN-EAST	N	ORBITAL FLIGHT	X
MEDITERRANEAN-WEST	N	OREGON	F
MEXICO	L	PAC REGION CAP 8	F
MICHIGAN	B	PACIFIC NORTH	X
MICRONESIA FED ST	S	PACIFIC OCEAN	X
MID E REGION CAP 2	X	PACIFIC OCEAN NE	G
MIDDLE EAST	Z	PACIFIC OCEAN NW	H
MIDWAY ISLAND		PACIFIC OCEAN SE	L H
MINNESOTA	B	PAKISTAN	Z
MISSISSIPPI	C	PALAU REPUBLIC OF	S
MISSISSIPPI E OF	X	PALMYRA ISLAND	S
MISSISSIPPI W OF		PANAMA CANAL ZONE	K X
MISSOURI	B	PANAMA REPUBLIC	L
MONACO	N	PAPUA NEW GUINEA	S
MONGOLIAN REPUBLIC	Q	PAPUA (TERRITORY OF)	S
MONTANA	D	PARACEL ISLANDS	S
MONTserrat	K	PARAGUAY	L
MOROCCO (KINGDOM OF)	P	PENNSYLVANIA	A
MOZAMBIQUE	P	PERSIAN GULF	Z
N CE REGION CAP 5	X	PERU	L
NAMIBIA	X	PHILLIPPINES REP.	S
NATO COUNTRIES ALL	X	PHOENIX ISLANDS	S

PITCAIRN ISLAND	S	SPCE RES-FR/GERMANY	X
POLAND PEO REPUBLI	O	SPCE RES-FRANCE	X
PORTUGAL	N	SPCE RES-FRANCE	X
PORTUGUESE TIMOR	S	SPCE RES-FRANCE	X
PUERTO RICO	K	SPCE RES-FRANCE	X
QATAR	Z	SPCE RES-FRANCE	X
RCKY MTN RGN. CAP 7	D	SPCE RES-FRANCE	X
RECEIVE ONLY RECRD	X	SPCE RES-FRANCE	X
RED SEA	Z	SPCE RES-FRANCE	X
REUNION (FRENCH)	T	SPCE RES-GERMANY	X
RHODE ISLAND	A	SPCE RES-GERMANY	X
RODRIGUEZ	P	SPCE RES-JAPAN	X
ROUMANIA SOCLT REP	O	SPCE RES-JAPAN	X
RWANDA REPUBLIC	P	SPCE RES-SWEDEN	X
S. HELENA	K	SPCE RES-USA	X
S. PIERRE/MIQUELON	J	SPCE RES-USA	X
S. TOME/PRINCIPE	K	SPCE RES-USA	X
SAINT LUCIA	K	SPITSBERGEN	M
SAN MARINO (ITU)	P	SRI LANKA (CEYLON)	S
SARDINIA	N	ST CRISTOPH/NEVIS	K
SAUDI ARABIA KINGD	Z	ST PAUL AMSTERDAM	T
SE REGION CAP 4		ST VINCENT/GRENADIN	K X
SENEGAL REPUBLIC	P	SUDAN REPUBLIC	Z
SERBIA AND MONTENEGRO	O	SULTANTATE OF OMAN	Z
SYCHELLES	S	SURINAM REP OF	L
SICILY	N	SW ATLANTIC OCEAN	L
SIERRA LEONE	P	SW PACIFIC OCEAN	S
SIKKIM	S	SW REGION CAP 6	E
SINGAPORE REPUBLIC	S	SWAN ISLAND	K
SIXTH NAV DISTRICT	C	SWAZILAND KINGDOM	P
SLOVAKIA	O	SWEDEN	M
SLOVENIA	O	SWITZERLAND CONFED	N
SO AFRICA REPUBLIC	P	SYRIAN ARAB REP.	P
SOLOMON ISLANDS	S	TANZANIA (ITU)	P
SOMALI DEM REPUBLI	Z	TANZANIA REPUBLIC	P
SOMALILAND (BRITISH)	Z	TANZANIA (ZANZIBAR)	P
SOMALILAND (FRENCH)	Z	TENNESSEE	C
SOUTH AMERICA		TENTH NAV DISTRICT	K L
SOUTH CAROLINA	C	TEXAS	E
SOUTH CHINA SEA	R	THAILAND	S
SOUTH DAKOTA	D	THIRD NAV DISTRICT	A
SP TER NE MOROCCO	P	THIRTEENTH NAV DIS	X
SPACE SYSTEM	X	TOGOLESE REPUBLIC	P
SPACEGEOSTATIONARY	W	TOKELAU ISLANDS	S
SPACENON-GEOSTTNR	U	TONGA KINGDOM	S
SPAIN	N	TRINIDAD/TOBAGO	K
SPANISH SAHARIAN T	P	TRISTAN DA CUNHA	K
SPCE MET-FRANCE	X	TRUCIAL STATES	Z
SPCE MET-RUSSIA	X	TRUST TERRITORIES	S
SPCE MET-USA	X	TUNISIA	P
SPCE MET-USA	X	TURKEY	N
SPCE RADNAV-USA	X	TURKS/CAICOS IS.	K
SPCE RES-CANADA	X	TUVALU	S
SPCE RES-CANADA	X	TWELTH NAV DIST	X

UGANDA	P	VIET-NAM SOUTH	S
UK GREAT BRITAIN	N	VIRGIN IS BR. (ITU)	K
UK STA IN REGION 1	X	VIRGIN IS US (ITU)	K
UK STA IN REGION 2	X	VIRGIN ISLANDS	K
UK STA IN REGION 3	X	VIRGINIA	A
UKRAINIAN SSR	Q	WAKE ISLAND	S
UN ARAB EMPIRATES	Z	WALLIS/FUTANA ISLS	S
UN MAG INDIA PAK	S	WASHINGTON	F
UN TRUCE SUPER JER	P	WEST VIRGINIA	A
URUGUAY REPUBLIC	L	WESTERN SAMOA	S
US (50 STATES-DC)	X	WISCONSIN	B
US OCEAN STATION	X	WORLDWIDE	U
US POSSESSIONS ONLY	X	WORLD WIDE AREA	U
USP (US AND POSS)	V	WRLD WIDE RESTRICT	X
USSR	Q	WYOMING	D
UTAH	D	YEMEN ARAB REPUBLI	Z
VANUATA (REP. OF)	S	YEMEN (PEO DEM REP)	Z
VATICAN CITY STATE	N	YOGOSLAVIA	O
VENEZUELA REPUBLIC	L	ZAIRE	P
VERMONT	A	ZAIRE	P
VIET-NAM NORTH	S	ZAMBIA REPUBLIC	P

ANNEX F – IRAC-APPROVED RECORD NOTES

IRAC Coordination (C), Emission (E), Limitation (L), Priority (P) and Special (S) record notes are used in Data Item 500. IRAC Minute (M) notes are used in Data Item 501.

Coordination Notes

- C002--Subject to coordination with the Western Area Frequency Coordinator located at the Navy Pacific Missile Test Center, Pt. Mugu, Cal., prior to use within a 322 kilometer radius of Pt. Mugu or in California south of Latitude 37°30' North.
- C003--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Western Area Frequency Coordinator (WAFC) who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the WAFC as necessary to ensure compatibility with existing uses.
- C004--Subject to coordination with the Eastern Area Frequency Coordinator located at Patrick AFB, Florida, prior to use within the area bounded by 24°N31°30'N and 77°W 83°W.
- C005--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Eastern Area Frequency Coordinator, Patrick AFB, Florida, who also coordinated it, as appropriate, with Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the Eastern AFC, Patrick AFB, Florida, as necessary to ensure compatibility with existing uses.
- C006--Subject to coordination with the Area Frequency Coordinator located at White Sands Missile Range, New Mexico, prior to use in the State of New Mexico or other U.S. territory within a 240 kilometer radius of WSMR plus the area of Utah and Colorado that lies south of 41° North and between 108° and 111° West. Phone: 505-678-5417 or 3702, Autovon: 258-5417 or 3702.
- C007--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, WSMR, New Mexico, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC, WSMR, New Mexico, as necessary to ensure compatibility with the existing uses.
- C008--Subject to Coordination with the Area Frequency Coordinator, State of Arizona, ATTN: SFIS-FAC-SH, Ft. Huachuca, AZ 85613-5000, Phone: (520) 538-6423; FAX (520) 538-8525; DSN 879-6423.
- C009--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, Ft. Huachuca, Arizona, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC, Ft. Huachuca, as necessary to ensure compatibility with existing uses.
- C010--Subject to coordination with the Gulf Area Frequency Coordinator located at Eglin AFB, Florida, prior to use within the area bounded by 27°N 33°30'N and 83°W 90°W.
- C011--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Gulf Area Frequency Coordinator, Eglin AFB, Florida, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the Gulf AFC, Eglin AFB, Florida, as necessary to ensure compatibility with existing uses.
- C012--Subject to coordination with the Joint Frequency Management Office Pacific (JFMOPAC) located at the Headquarters, Commander, U.S. Pacific Command, Camp H. M. Smith, Hawaii, prior to use in the state of Hawaii or within the area enclosed by 322 kilometer distance from the shores of the state of Hawaii.
- C013--Subject to local coordination with Frequency Manager, AFFTC, Edwards AFB, California.
- C014--Subject to coordination with the Joint Frequency Management Office Guam (JFMO GUAM) located at the Headquarters, Commander, U.S. Pacific Command, Camp H. M. Smith, Hawaii, prior to use on the island of Guam or within the area enclosed by 322 kilometer distance from the shores of island of Guam.
- C015--Subject to prior coordination with Frequency Manager, Air Force Space and Missile Technical Center, Vandenberg AFB, California.
- C016--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the HQ USAF Frequency Coordinator, Alexandria, VA., who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the

- authority of this assignment is subject to such further coordination with the HQ USAF Frequency Coordinator, Alexandria, VA., as necessary to ensure compatibility with existing uses.
- C019--Subject to prior coordination with Army Frequency Management Office (AFMO) - CONUS, 1214 Stanley Road, Suite 32, Ft. Sam Houston, Texas 78234-5032. Phone: 210-221-2050/2820, (DSN 471).
- C022--Subject to prior coordination with Frequency Manager, Army Missile Command, Huntsville, Alabama.
- C024--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to its authorization with AFMO CONUS, Ft. Sam Houston, Texas, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with AFMO CONUS, Ft. Sam Houston, Texas, as necessary to ensure compatibility with existing uses.
- C026--Subject to prior coordination with DOE Frequency Coordinator for Albuquerque Operations Office. Phone 575-3458, FTS, or (702) 295-3458, Commercial, or 575-3343, FTS, (702) 295-3343, Commercial (weekends, holidays, and off-duty hours).
- C027--Subject to prior coordination with DOE Area Frequency Coordinator, Las Vegas, Nevada, when used within the State of Nevada or within a 160 kilometer radius of Mercury or Tonopah, Nevada. Phone 575-3458 or 1162 FTS, 702-295-3458 or 1162 Commercial, and 575-3343 FTS or, 702-295-3343 Commercial (weekends, holidays, and off-duty hours).
- C028--Subject to prior coordination with DOE Frequency Coordinator for Albuquerque Operations Office when used in a 160 kilometer radius of Albuquerque, New Mexico. Phone 757-3458, FTS, or (702) 295-3458, Commercial, and 575-3343, FTS, (702) 295-3343, Commercial (weekends, holidays, and off-duty hours).
- C030--The Department of Commerce is designated as control for Government use of this frequency. Use under this assignment is subject to initial coordination with, and subsequent coordination as indicated by, Radio Frequency Coordinator S.I.G. Research Facilities Center, NOAA, Department of Commerce, P. O. Box 520197, Miami, Florida 33152. Phone 305-526-2936 (FTS 350-2936).
- C031--Subject to prior coordination with FAA Eastern Regional Office, JFK International Airport, New York 11430, Attn: Frequency Management Office. Phone 718-712-8343.
- C032--Subject to prior coordination with FAA Southern Regional Office, P. O. Box 20636, Atlanta, Georgia 30344, Attn: Frequency Management Office. Phone 404-763-7385/6.
- C033--Subject to prior coordination with FAA Central Regional Office, 601 East 12th Street, Kansas City, Missouri 64106, Attn: Frequency Management Office. Phone 816-426-5647.
- C034--Subject to prior coordination with FAA Southwest Regional Office, 4400 Blue Mound, Fort Worth, Texas 76193-0483, Attn: Frequency Management Office. Phone 817-740-3237.
- C035--Subject to prior coordination with FAA Western Regional Office, P.O. Box 92007, Worldway Center, Los Angeles, California 90009, Attn: Frequency Management Office. Phone 310-297-1872.
- C036--Subject to prior coordination with FAA Alaskan Regional Office, 222 West 7th Ave., Anchorage, Alaska 99513. Phone 907-243-7246 or 4399.
- C037--Subject to prior coordination with FAA Western Pacific Regional Office, Honolulu ARTCC, P.O. Box 50109, Honolulu, Hawaii 96850-4983 Attn: Frequency Management Office. Phone 808-541-1241.
- C038--Subject to prior coordination with FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts 01803. Phone 617-273-7177.
- C039--Subject to prior coordination with FAA Great Lakes Regional Office, 2300 East Devon Avenue, Des Plaines, Illinois 60018. Phone 312-694-7071.
- C041--Subject to prior coordination with FAA Northwest Regional Office, 1601 Lind Avenue, S.W., Renton, Washington 98055-4056. Phone 206-227-2464.
- C042--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Northwest Coordinator, Seattle, Washington. Use of this frequency or band under the authority of this assignment is subject to such further coordination with the FAA Northwest Coordinator, Seattle, Washington, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Northwest regional coordination has been accomplished.
- C043--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Western Coordinator, Los Angeles, California. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Western Coordinator, Los Angeles, California, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Western regional coordination has been accomplished.
- C045--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Central Coordinator, Kansas City, Missouri. Use of this frequency or band under the authority of this assignment is subject to such further coordination with the FAA

- Central Coordinator, Kansas City, Missouri, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Central regional coordination has been accomplished.
- C046--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Southwest Coordinator, Ft. Worth, Texas. Use of this frequency or band under the authority of this assignment is subject to such further coordination with the FAA Southwest Coordinator, Ft. Worth, Texas, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Southwest regional coordination has been accomplished.
- C047--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Great Lakes Coordinator, Des Plaines, Illinois. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Great Lakes Coordinator, Des Plaines, Illinois, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Great Lakes regional coordination has been accomplished.
- C048--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Southern Coordinator, Atlanta, Georgia. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Southern Coordinator, Atlanta, Georgia, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Southern regional coordination has been accomplished.
- C049--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Eastern Coordinator, New York, New York. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Eastern Coordinator, New York, New York, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Eastern regional coordination has been accomplished.
- C050--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA New England Coordinator, Burlington, Massachusetts. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA New England Coordinator, Burlington, Massachusetts, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA New England regional coordination has been accomplished.
- C052--Subject to local coordination with FCC Engineer-in-Charge to avoid interference to non-Government services.
- C057--Subject to prior coordination with NASA Spectrum Manager, Johnson Space Center, Houston, Texas. Telephone: (FTS) 525-0122 or (commercial) 713-483-0122.
- C060--Prior to operational use, this frequency assignment must be coordinated with and concurred by the commander of the military installation listed.
- C061--Operational use of this frequency assignment has been coordinated with and concurred by the commander of the military installation listed.
- C062--DOE use of this frequency for telemetering is subject to prior coordination at the national level with agencies having assignments in the same band and will be subject, at the time of such coordination, to adjustment to preclude harmful interference.
- C064--All transmissions to NASA's ATS-1 through 5 Satellites shall be coordinated and scheduled with the ATS Project Manager or the ATS Experiments Manager, ATS 1/5, Lewis Research Center, Cleveland, Ohio 44135. Telephone: (216) 433-3483 or 433-3570.
- C065--Subject to coordination, prior to use, with the Department of the Interior, Bureau of Land Management, National Interagency Fire Center, Boise, Idaho. Telephone: (208) 387-5644.
- C067--Subject to coordination with the Area Frequency Coordinator located at Nellis AFB, Nevada, prior to use in the states of Nevada, Utah west of 111°W and Idaho south of 44°N.
- C068--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, Nellis AFB, Nevada, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC as necessary to ensure compatibility with existing uses.
- C069--Subject to coordination and scheduling with Mr. Dane Clark; National Environmental Satellite, Data, and Information Service (NESDIS); U.S. Department of Commerce; Direct Services Division (E/SP3); Room 3340 FB4 NOAA; 5200 Auth Road, Suitland, MD 20746-4304; Telephone: (301) 457-5681.

- C071--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Alaskan Coordinator, Anchorage, Alaska. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Alaskan Coordinator, Anchorage, Alaska, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Alaskan regional coordination has been accomplished.
- C072--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Pacific Coordinator, Honolulu, Hawaii. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Pacific Coordinator, Honolulu, Hawaii, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Pacific regional coordination has been accomplished.
- C073--Subject to prior coordination with NASA Spectrum Manager, Wallops Flight Center, Wallops Island, Virginia. Telephone: (FTS) 8-889-1278 or commercial 804-824-1278.
- C074--Operational activities should be coordinated with NASA Spectrum Manager responsible for JPL/Goldstone Programs. Mail: 4800 Oak Grove Drive, Mail Stop 303-404, Pasadena, CA 91109. Telephone: (FTS) 8-792-0068 or (commercial) 818-354-0068.
- C075--This assignment has been coordinated with the Hydrology Committee in accordance with Section 8.3.6.
- C076--This assignment has been coordinated with the Radio Spectrum Manager, National Science Foundation, 1800 G St., N.W., Washington, D.C. 20550. Telephone: (202) 357-9696 in accordance with Section 8.3.7, for the band 1660-1670 MHz, or Section 8.3.19.
- C078--The domestic fixed aspects of this assignment have been coordinated with NTIA in accordance with Section 8.2.11 of the NTIA manual.
- C080--Subject to prior coordination with the Department of the Interior, U.S. Geological Survey, Earthquakes Hazards Team, Seismology Section, Menlo Park, CA, Communications Coordinator, (415) 329-4780 or 4727, and subject to adjustment in the event of interference to Interior operations within the same splinter channel (Section 4.3.7).
- C081--This assignment is for a station in the National Radio Quiet Zone. Successful coordination has been effected in accordance with Section 8.3.9 of the NTIA Manual.
- C085--Subject to prior coordination with Army Frequency Coordinator, Military District of Washington, ATTN: ASNK-OPB, Fort Lesley J. McNair, Washington, D.C. 20319-5050. Phone 202-475-2554 or 2486, Autovon 335-2554 or 2486.
- C086--This frequency assignment in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Mid-Atlantic Area Frequency Coordinator, Patuxent River, Maryland, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC as necessary to ensure compatibility with existing uses.
- C088--Prior to use, this frequency assignment must be scheduled with the Post Frequency Manager, Aberdeen Proving Ground, MD. Telephone: 410-278-7591; DSN 298-7591.
- C089--This frequency assignment was coordinated prior to authorization with FAA Headquarters, 800 Independence Avenue, S.W., Washington, D.C. 20591. Phone: 202-267-8699.
- C090--In the band 162 to 174 MHz, subject to coordination with adjacent channel users (bandwidth equal to or greater than 12.5 kHz) prior to establishing a station on an interstitial channel under S322 procedures. This note is automatically deleted on January 1, 2005.
- C092--In the band 406.1 to 420 MHz, subject to coordination with adjacent channel users (bandwidth equal to or greater than 12.5 kHz) prior to establishing a station on an interstitial channel under S322 procedures. This note is automatically deleted on January 1, 2008.
- C093--Subject to coordination with the Area Frequency Coordinator located at the Atlantic Fleet Weapons Training Facility, Roosevelt Roads, Puerto Rico, prior to use within the area 370 kilometers of Headquarters Building, Atlantic Fleet Weapons Training Facility, Roosevelt Roads, Puerto Rico.
- C094--Subject to coordination with the Area Frequency Coordinator located at the Naval Air Warfare Center Aircraft Division, Patuxent River, Maryland, prior to use within the area enclosed by 100 kilometer radius of Headquarters Building, Naval Air Warfare Center Aircraft Division, Patuxent River, Maryland.
- C095--The non-military agency allotted primary use of this frequency, or which shares primary allotment status with AGA, has agreed Record Note P076 is not required for this assignment.

Emission Notes

E013--A3 emission authorized for secondary and intermittent operation.
 E023--Voice transmission is authorized for test and maintenance only.
 E028--Lower sideband transmission. The carrier is higher than the assigned frequency shown by one half of the indicated bandwidth.¹
 E029--Upper sideband transmission. The carrier is lower than the assigned frequency shown by one half of the indicated bandwidth.¹
 E030--Lower sideband greater. The suppressed carrier is higher than the assigned frequency shown by 1.5 kHz.¹
 E031--Upper sideband greater. The suppressed carrier is lower than the assigned frequency shown by 1.5 kHz.²
 E032--Lower sideband greater. The suppressed carrier is higher than the assigned frequency shown by .5 kHz.²
 E033--Upper sideband greater. The suppressed carrier is lower than the assigned frequency shown by .5 kHz.²
 E035--Lower sideband transmission.¹
 E036--Upper sideband transmission.¹
 E037--Full-carrier SSB emission (3KH3E) shall be used except (1) when it is known that the receiving station is capable of receiving suppressed-carrier emission (3KJ3E) and (2) upon request of any station using the same carrier frequency (Ref: FCC 87.67b).
 E038--When a single sideband emission is used from the various emissions shown on this HF assignment, the carrier frequency will be set to place the center of intelligence at the assigned frequency.
 E039--The authorized emission bandwidth shall be so located within the band that it does not extend beyond the upper or lower limits of the authorized band shown in the *FRB entry of circuit remarks. If a portion(s) of the authorized band is to be excluded (*FBE) the authorized emission bandwidth must not extend into any portion(s) of the excluded band(s).

Limitation Notes

L2--Restricted to (daytime, nighttime, or indicated hours of operation.) Wherever used herein the term daytime means from two hours after local sunrise until two hours before local sunset. The term nighttime only means from two hours prior to local sunset until two hours after local sunrise at (a) specified point(s). Local time at transmitter is applicable unless otherwise specified.
 L3--For communication with _____ stations only.
 L012--To be used only in an emergency jeopardizing life, public safety, or important property under conditions calling for immediate communication where other means of communication do not exist or are temporarily disrupted or inadequate. To insure that radio equipment for emergency use is maintained in satisfactory operating condition, testing on such frequencies is permitted, provided that insofar as practicable, transmitters shall be tested with a non-radiating load and the test use of a radiating antenna held to a minimum and provided further that such testing shall be restricted to test message traffic and shall not include operator training.
 L109--Restricted to non-air carrier operations normally unavailable to military aircraft.
 L113--L012 FX
 L116--L2 daytime
 L121--L2 daytime Hawaii and westward
 L125--L2 local sunrise to local sunset
 L127--L2 local sunset to local sunrise
 L131--L2 nighttime
 L168--L3 GCA or approach control
 L171--L3 Agriculture
 L174--L3 Army
 L177--L3 Federal Aviation Administration
 L180--L3 Coast Guard
 L182--L3 Interior
 L187--L3 Military
 L188--L3 Military aircraft or aircraft authorized for military use
 L190--L3 Navy
 L192--L3 non-Government
 L193--L3 non-Government aircraft
 L195--L3 non-Government coast stations
 L197--L3 non-Government public correspondence
 L199--L3 non-Government ships
 L201--L3 public correspondence

L203--L3 U.S. Army Engineers
 L207--L3 civil aircraft
 L242--L2 1300-2300 GMT
 L255--L2 0200-0730 GMT
 L256--L2 0200-0800 GMT and 1800-2300 GMT
 L257--L2 0600-2100 GMT
 L278--L2 0200-1100 GMT
 L282--This assignment is for Aback-up@ use only when regular channels are either temporarily disrupted or inadequate.
 L283--Limited to communications in or near a port, or in locks or waterways, between coast stations and ship stations, or between ship stations, in which messages are restricted to those related to the operational handling, the movement and the safety of ships, and, in emergency, to the safety of persons. Messages which are of a public correspondence nature shall be excluded.
 L294--L2 1400-2200 GMT
 L298--Limited to communications with CAP radio stations when engaged in training or on an actual CAP mission in support of USAF.
 L304--L2 1500-0800 GMT April through September; 1800-0500 GMT October through March
 L308--L3 Commerce
 L309--L012 FB
 L318--Authority under this assignment is limited to temporary periods and locations for telemetry of seismic data.
 L330--This assignment is limited to communications with non-Government ships for the exchange of traffic dealing with safety of life or property when other means of communication are not practicable.
 L331--L2 0900-1300 and 1400-1600 GMT
 L332--L2 2200-0300 GMT
 L334--L2 0330-1830 GMT
 L336--L2 1000-1700 GMT
 L339--L2 1200-0300 GMT
 L341--Limited to operations conducted in accordance with Bridge-to-Bridge portion of Section 8.2.29 of the NTIA Manual
 L343--L3 Tennessee Valley Authority
 L347--L2 2330-2230 GMT
 L350--Limited to use from November 15 to April 1.
 L351--L2 2000-1000 GMT
 L353--L2 0100-0600 Local
 L355--Limited to ground transmissions only.
 L356--Mobile transmissions allowed only in accordance with Section 7.5.5 of the NTIA Manual.
 L357--This band assignment is authorized only for air/ground frequency assignment in the AAG/MAG bands (118-137 MHz and those frequencies utilized by the FAA for air traffic control in the 225-328.6 and 335.4-400 MHz band) and is for "back-up" use only when regular channels are either temporarily disrupted or inadequate. Actual frequencies will be listed in Agency Remarks.
 L358--L2 1300-2200 GMT

“M” Notes

M001--A note concerning this assignment is recorded in the minutes of the FAS meeting at which the application was approved. The source of the note is identified in the CIRCUIT REMARKS field (*NTS).
 M002--This assignment was coordinated with IRAC or NTIA, and/or is subject to the conditions stated in the letter, the IRAC Document, the FAS Docket, or the FCC Regulation referenced in the CIRCUIT REMARKS field (*NTS).
 M003--Subject to coordination prior to activation and, as appropriate, possible scheduling with the activity(ies) or station(s) listed in the CIRCUIT REMARKS field (*NTS).
 M004--Subject to coordination prior to activation and, as appropriate, possible scheduling with the activity(ies) listed in the CIRCUIT REMARKS field (*NTS) when used within interference range of such activity(ies) or station(s).
 M006--Subject to coordination prior to activation with the National Weather Service Meteorologist-In-Charge at the location(s) listed in the CIRCUIT REMARKS field (*NTS).
 M007--Subject to notification of activation to the agency or activity listed in the CIRCUIT REMARKS field

- (*NTS).
- M008--Operations under the authority of this assignment are subject to immediate adjustment, including cessation, if they result in harmful interference to the operations listed in the CIRCUIT REMARKS field (*NTS).
- M009--Operations under the authority of this assignment a) are on a noninterference basis to the operations of the agency listed in the CIRCUIT REMARKS field (*NTS) on the same or adjacent channel and b) no protection can be afforded by that agency.
- M010--This assignment was agreed to on a nonrenewable basis by the agency identified in the CIRCUIT REMARKS field (*NTS).
- M011--Limited to the non-broadcast hours of and subject to coordination prior to activation with the station(s) listed in the CIRCUIT REMARKS field (*NTS).
- M013--Subject to prior coordination with and concurrence by the organization/official listed in the CIRCUIT REMARKS field (*NTS) and to temporary cessation when required for marine environmental operations.
- M014--During transmission, aircraft shall not exceed the altitude listed in the CIRCUIT REMARKS field (*NTS).
- M015--The system using this assignment was reviewed by the SPS in accordance with Chapter 10 and the assignment is being made subject to conditions stated in the IRAC and SPS documents referenced in the CIRCUIT REMARKS field (*NTS).
- M016--This assignment, made pursuant to Resolution 8 of the GWARC-79, is for planning purposes and is not an authority to operate. Operations may commence after satisfactory replacement action has been completed for (FAS DKT number(s)--optional: freq, agency serial number), and/or after (XXYY) (Date agreed to by displaced agency).
- M017--This non-Government space station assignment is made with the understanding that protection cannot be guaranteed to reception of the non-Government earth station(s) identified in the CIRCUIT REMARKS field (*NTS) due to the operation of existing transmitting earth stations and/or Government fixed stations.

Priority Notes

- P032--Noninterference basis
- P074--Not to preclude expansion and adjustment of operations within the band 162.0 to 174.0 MHz by non-military Government agencies
- P076--Not to preclude expansion and adjustment of operations within the band 406.1 to 420.0 MHz by non-military Government agencies.

Special Notes

- S012--This operation does not include operator qualification training, but is a periodic operation of a communications system manned by fully qualified operators who are military reservists or affiliates. Except in emergencies, this frequency assignment will not be used as a means for passing traffic that in the absence of this authorization would require delivery by other means.
- S015--Remote control
- S017--This assignment is for the training of personnel in the technique and operational aspects of the electronic equipment.
- S032--Common simplex channel for emergency and distress communications only. Available to all stations operating in or with aeronautical services.
- S034--Disaster communications
- S035--Distress, safety and calling
- S038--FAC operation simultaneous with RLL
- S041--For calibrating direction finders
- S043--For emergency use at scene of air sea rescue
- S047--For transmission of hydrologic and meteorological data
- S048--For transmission of hydrologic data
- S059--Radio direction finding
- S063--Search and rescue communications
- S067--Subject to Department to the Interior, Bureau of Indian Affairs net control
- S068--Subject to immediate shutdown as needs of service may dictate
- S070--Subject to immediate cancellation upon notice from FCC

- S085--Training and testing operations
- S120--Intermittent equipment tests
- S139--Transmissions on this frequency will be discontinued upon receipt of notification to the effect that harmful interference is being caused to the international broadcasting service.
- S141--This U.S. Government record is outside of the US&P and therefore does not fall within the jurisdiction of the NTIA and IRAC/FAS. This record is incorporated into the Government Master File for spectrum management, analysis and information purposes and does not constitute NTIA authority to transmit.
- S142--Drone Control
- S144--This assignment is not in complete conformity with the National Table of Frequency Allocations. Those operations that are conducted under the non-conforming portions of this assignment are on a secondary basis to operations conducted under assignments that are in conformity with the National Table of Frequency Allocations.
- S145--This frequency is subject to adjustment upon notice from the Military.
- S147--These frequencies are used for a very short time only during actual nuclear test or dry runs prior to actual test. Such use of frequencies will be on a secondary basis subject to the avoidance of harmful interference to all operations established in accordance with international allocations applicable to these frequencies and to all other operations regularly authorized within the United States and Possessions on specific frequencies within these bands.
- S148--This is an assignment for domestic service use in providing instantaneous transmission of vital emergency, operational command and alerting traffic of such importance as to affect the immediate survival and defense of the Nation. Circuits utilizing this frequency will be maintained in an operational status at all times, with on-the-air test transmissions to insure the highest degree of readiness. This assignment requires protection commensurate with the importance of the communications for which the circuit is intended.
- S149--Any use of this assignment that is not at a transient location or that is for a period exceeding 15 days shall be notified to the FAS.
- S154--Scene of disaster frequency
- S155--For interception and retransmission of television signals
- S157--Non-Government service
- S159--U. S. Government short-distance low-power service
- S160--This assignment has been made pursuant to Part 7.12 of the NTIA Manual and has been coordinated in accordance with Section 8.3.3.
- S164--This assignment is not in complete conformity with the National Table of Frequency Allocations. Nevertheless, in the national interest, it is on an equal basis with assignments that are in conformity with the National Table of Frequency Allocations.
- S165--This assignment has been made pursuant to Section 7.5.2 of the NTIA Manual for communication with non-Government stations in the maritime mobile service.
- S170--Authorized additionally in tactical and training operations when employing single sideband equipment with 3KH3E, 4KJ7B, 4KJ9W emissions for use with peak envelope powers not to exceed 2000 watts. In such operations the following additional conditions are applicable. All necessary emissions under the several modes of operation, including reduced carriers, shall be within ± 3 kHz of the listed frequency. If harmful interference is caused to authorized operations, the power of this operation will be reduced to the mean power shown for this listing. In the determination of particular listed frequencies and associated carrier frequencies to meet individual tactical needs, due consideration will be given, particularly when utilizing powers in excess of the powers normally authorized on this frequency, to the avoidance of harmful interference to radio services authorized on the same or adjacent frequencies. With respect to the conduct of peacetime training operations, such use of the frequency is on a non-interference basis to the authorized operations of other agencies.
- S171--Authorized additionally in tactical and training operations when employing single sideband equipment with 3KH3E, 4KJ7B, 4KJ9W emissions for use with peak envelope powers not to exceed 400 watts. In such operations the following additional conditions are applicable. All necessary emissions under the several modes of operation, including reduced carriers, shall be within ± 3 kHz of the listed frequency. If harmful interference is caused to authorized operations, the power of this operation will be reduced to the mean power shown for this listing. In the determination of particular listed frequencies and associated carrier frequencies to meet individual tactical needs, due consideration will be given, particularly when utilizing powers in excess of the powers normally authorized on this frequency, to the avoidance of harmful interference to radio services authorized on the same or adjacent frequencies. With respect to the conduct of peacetime training operations, such use of the frequency is on a non-interference basis to the authorized operations of other agencies.
- S179--Power shown is for emergencies only. Normal power is 4 kW or less.
- S181--This assignment was authorized pursuant to Public Law 87-795.
- S185--Secondary service. Maximum number of transmitters authorized: 10

S186--Power shown is for intermittent or emergency use. Normal power is 20 kW.

S189--Tactical and/or training operations

S195--Safety Communications.

S196--This assignment is for range safety (command destruct/flight termination) in the band 406.1-420 MHz and is authorized in accordance with Section 8.2.54 of the NTIA Manual with an expiration date not to exceed December 31, 2006.

S197--This assignment is for range safety (command destruct/flight termination) in the band 420-450 MHz and is authorized in accordance with Section 8.2.54 of the NTIA Manual.

S199--Navy operations authorized by assignments bearing this note shall not cause harmful interference to those non-Government operations existing at the time of authorization. The Navy agrees to make such adjustments of its group of high frequency coast telegraph assignments bearing this note as may be necessary to accommodate necessary expansion or adjustment of the non-Government coast telegraph service.

S200--JCS communication circuit

S205--Civil defense network

S206--This assignment is for an operation for which other telecommunication facilities do not exist, are inadequate, or are impracticable of installation, and for which the use of frequencies above 30 MHz is not practicable. This note applies to FX or AX station classes only.

S208--This assignment is for the domestic haul of overseas traffic in transit or destined for the United States, for an operation where technical and operational requirements dictate such use. The domestic radio haul is a segment of the overall overseas radio system.

S211--50 kW mean power used during emergency or unusually poor propagation conditions. 10 kW mean power used during normal conditions. 2.5 kW mean power used during unusually good propagation conditions.

S219--Power shown is for emergency use. Normal power is 3 kW.

S227--Power shown is for emergency use. Normal power is 1.5 kW.

S233--This assignment is part of a frequency pool, and, with Department of State approval, it may be used by foreign embassies that are authorized the use of other frequency assignments under Public Law 87-795.

S242--The NASA Unified S-band system operates in the 2270-2290 MHz portion of the 2200-2290 MHz space telemetering band on a shared basis. This system will be utilized in space missions of extended duration. In certain geographical areas agencies conducting telemetering operations on the shared frequencies in the 2270-2290 MHz band may be requested by NASA to adjust such operations as necessary to support the space mission involved.

S264--This assignment will not be used except in the event that full-scale atmospheric nuclear testing is resumed, and it is further subject to prior coordination with PACOM.

S265--Transmissions shall be directed so as to avoid harmful interference to FAA stations in the Edwards AFB area.

S267--Required for use in emergency areas when required to make initial contact with RACES units. Also for communications with RACES stations on matters requiring coordination.

S279--This listing represents a use of a laser(s) for telecommunication purposes and it is entered in the Government Master File (GMF) for information.

S286--The Coast Guard agrees to make such adjustments in its coast telegraph operations as necessary to provide an accommodation for non-Government coast radiotelegraph operations anticipated by the designation of this frequency in Part 81, FCC Rules.

S288--This frequency assignment is to support the National Command Authority. Circuits utilizing this frequency will be maintained in operational status at all times.

S291--Operations are subject to compliance with FCC Rules and Regulations Part 87, subpart c. Advisory service shall be given to any private aircraft upon request. The use of this frequency shall not be a deterrent to the establishment of a non-Government advisory station in this area. Operations on this frequency shall cease upon the establishment of non-Government facilities or upon notice of harmful interference thereto.

S292--Not to be a bar to complete operational implementation of common system aids to Air Navigation.

S296--Not to preclude assignment of this frequency to other agencies at specific locations.

S297--This assignment is part of the Wide-area Multi-user Land Mobile Justice Wireless Network certified by NTIA in IRAC Doc. 31594. The provisions of paragraphs 3 through 5 of Section 8.2.48A of the NTIA Manual, except for the provisions of Paragraph 3 of that Section that require each agency to conduct requirements= analysis of need and to conduct an analysis of alternatives to operating their own system, are waived for this assignment.

S298--Subject to Department of the Interior, U.S. Fish and Wildlife Service net control.

S299--Power shown is into a buried vertical dipole. ERP is approximately 1 kW.

S301--Operations under the authority of this assignment a) are not protected from harmful interference which may be caused by authorized stations operating in accordance with the National Table of Frequency Allocations and b) are subject to immediate adjustment, including cessation, if they result in harmful interference to authorized

- stations operating in accordance with that table.
- S302--Subject to the understanding that equipment will not be developed for operational use in this band.
- S303--Subject to the understanding that there is not intended operational use of this equipment within USP.
- S321--This assignment is for planning purposes not to exceed 3 years (see Section 9.6.5). The Note will be deleted after the assignment has been activated or this assignment will be deleted after specific locations have been notified.
- S322--Stations established under the authority of this assignment shall conform to its technical particulars and shall be notified, as specified in Section 9.1.3 of the NTIA Manual, for inclusion in the list of Frequency Assignment to Government Radio Stations.
- S323--This assignment is for use in a system, or research and development looking toward such a system, for which funds have been committed for Stage 1 (Planning [conceptual]), as defined in Section 10.3.1 of the NTIA Manual prior to January 1, 1973. Follow-on stages in the system life cycle are subject to the provisions of Part 10.3 of the NTIA Manual.
- S324--This assignment is for use in a system, or research and development looking toward such a system, for which funds had been committed for Stage 2 (Experimentation), as defined in Section 10.3.1 of the NTIA Manual, prior to January 1, 1973. Follow-on stages in the system life cycle are subject to the provisions of Part 10.3 of the NTIA Manual.
- S325--This assignment is for use in a system, or research and development looking toward such a system, for which funds had been committed for Stage 3 (Development), as defined in Section 10.3.1 of the NTIA Manual, prior to January 1, 1973. Follow-on stages in the system life cycle are subject to the provisions of Part 10.3 of the NTIA Manual.
- S326--This assignment is for use in a system, or research and development looking toward such a system, for which funds had been committed for Stage 4 (Procurement), as defined in Section 10.3.1 of the NTIA Manual, prior to January 1, 1973.
- S327--Marine environmental protection command/control/surveillance operations. Authorized additionally for other maritime mobile operations when not required for marine environmental purposes.
- S328--This assignment is not planned for renewal. It has been replaced by another assignment.
- S330--The equipment nomenclature or appropriate equipment coding is to be provided within six months after activation of the authorized station/s.
- S334--Subject to Department of the Interior, Bureau of Land Management net control.
- S335--This telemetry assignment is on a non-interference, non-protected basis as concerns assignments in the aeronautical mobile service.
- S337--This ITU Appendix S18 frequency for public correspondence from ships to coast stations is assigned to a remote Coast Guard lighthouse because it has no other means for entering the RCA ALSCOM System.
- S340--To be used in support of DOE scientific missions with protected status for short periods of time during actual operations. Such use will require coordination between the DOD and DOE and will be on a scheduled basis.
- S341--Subject to the continued applicability of note P074, this WSMR assignment is exempt from the requirement to be converted to a frequency listed in Section 4.3.7, NTIA Manual.
- S343--Within the areas listed in footnote US117 in the National Table of Frequency Allocations, operations under the authority of this assignment, other than those of mobile stations, are subject to prior coordination with the Secretary of the Committee on Radio Frequencies of the National Academy of Sciences.
- S344--This assignment has been granted a waiver and need not comply to the provisions of Section 8.2.20 of the NTIA Manual.
- S345--DOE operations in the band 4400-4990 MHz under this authority will be for emergency deployment of the NEST system. For such use in a given area, DOE will select clear channels based upon current GMF records. If time permits, DOE will coordinate specific frequencies with the appropriate military frequency managers/coordinators in the field. Tests and training will not be conducted under this authority; frequency applications for such operations will be submitted to the FAS/IRAC on a case by case basis.
- S346--This FAA assignment in the band 118- 136 MHz is for standby equipment and is used interchangeably with a co-channel assignment at a separate site.
- S348--Operations are subject to compliance with FCC Rules and Regulations, Part 95, Subpart D. Transmitters may be operated only by employees of the Federal Government only for the purpose of interfacing with Non-Government licensees to coordinate essential and mutual activities. This authority may be revoked by the Federal Communications Commission in its discretion at any time.
- S349--Not to preclude assignment of this frequency outside of normal land mobile interference range (excluding skip and sporadic E reflection etc.) of DOE receive stations.
- S350--In the frequency band 30-400 MHz for this FAC operation, power shown is for primary equipment. Back-up equipment has been engineered and installed with output power up to 35 watts. Use of this back-up equipment is authorized during emergencies and/or failure of primary equipment.

S351--This assignment is planned for implementation or deletion as a consolidation of frequencies being used.

S352--This assignment is for intermittent wide area requirements of transient, itinerant nature pursuant to Section 4.2.3 of the Manual.

S353--This assignment is for a common user frequency pursuant to Section 4.2.4 of the Manual.

S354--This planned assignment is for a Space Project that has been approved in principle by NTIA in the research/development phase. Some operational characteristics have not been determined. This listing does not provide authority to transmit.

S355--This assignment is for a wide-area, common-use frequency pursuant to Section 4.2.5 of the NTIA Manual.

S356--This assignment is for a local-area, common-use frequency pursuant to Section 4.2.6 of the NTIA Manual.

S357--Power shown is for emergencies only. Normal power is 10 kw.

S358--This assignment is exempt from referral to NTIA by Exception 1 of the domestic fixed policy in Section 8.2.11 of the NTIA Manual.

S359--This assignment is exempt from referral to NTIA by Exception 2 of the domestic fixed policy in Section 8.2.11 of the NTIA Manual.

S360--This assignment is exempt from referral to NTIA by Exception 3 of the domestic fixed policy in Section 8.2.11 of the NTIA Manual.

S361--Multiple transmitting and/or receiving stations operating at FIXED locations are involved in this assignment; and, it is not feasible to indicate all specific locations. (The method of operation must be fully explained in supplementary details when S361 is applied to a frequency assignment.)

S362--One or more transportable transmitting and/or receiving stations are utilized in this assignment.

S366--All operations will be outside of the U.S./Canada Border Zone, or for assignments for frequencies below 1000 MHz the power used while operating in the Border Zone will not exceed 5 watts.

S367--This frequency assignment has been made on an exceptional basis for operation in the National Radio Quiet Zone on the conditions that use shall be minimized consistent with operational requirements and that any technical modification to this assignment shall be coordinated in accordance with NTIA Manual 8.3.9.

S368--Subject to Department of the Interior, Bureau of Reclamation net control.

S369--This assignment is in accordance with Section 8.2.44.

S370--Transportable Earth Station operations in the 7300-7750 MHz and 8025-8400 MHz bands shall be deployed in such a manner as not to cause harmful interference to existing assignments and will adjust to allow additional stations of other radio services in these bands as required.

S371--This assignment is in accordance with Chapter 10 and Part 7.14 of the NTIA Manual.

S372--This assignment for the San Francisco/Pt Reyes area is subject to adjustments to accommodate new systems/programs or reassignments resulting from the implementations of these systems/programs.

S373--This assignment, in the 2700-2900 MHz band, is for operation in a designated heavily used area or for collocated operation (see Annex D of the NTIA Manual). This equipment has the capability of implementing the additional Electromagnetic Compatibility (EMC) provisions of RSEC Criteria D under Section 5.3 of the NTIA Manual. Implementation of this capability may be necessary at a later date.

S375--Operations authorized by assignments bearing this note shall be subject to the GMF recording method being developed in accordance with IRAC Doc. 23200/1 (FAS ADM 830029/1).

S376--Operations on this frequency under direct-control of the USDA, Forest Service.

S378--In emergency situations a maximum power of 25 watts for ship stations and 10 watts for coast stations is authorized.

S379--This assignment shall expire upon conclusion of the OPERATION ALLIANCE mission.

S381--Operations under this assignment are for SHARES traffic in accordance with Section 7.3.5 of the NTIA Manual.

S382--This record is retained for spectrum management and analysis purposes and does not constitute an NTIA authority to transmit.

S383--This sounder assignment complies with Section 8.2.21 of the NTIA Manual. The frequency bands listed in paragraph 1.c. of Section 8.2.21 have been suppressed. The information required by paragraph 2 of Section 8.2.21 is provided in the supplementary details of this assignment.

S384--This assignment has been made pursuant to Part 4.3.2 of the NTIA Manual.

S385--This GMF listing identifies passive sensor or Radio Astronomy receiving stations for spectrum management and analysis purposes and does not constitute an NTIA authority to transmit. Interference protection to the receiving station is afforded only to the extent provided in the National Table of Frequency Allocations.

S386--Operations authorized by assignments bearing this note shall be restricted to direct support of the OPERATION ALLIANCE mission, and are subject to the management and control of the U.S. Customs Service.

S387--Upon implementation of narrowband operations this channel will be vacated.

S388--This assignment supports DSCS Operations Center earth stations limited to locations at Fort Detrick, and Fort

- Meade, Maryland, and Camp Roberts, California. This assignment shall not preclude new terrestrial assignments within or overlapping the frequency band 7250-7750 MHz provided each new terrestrial assignment does not exceed a maximum tolerable interfering power of -141.3 dBm in any 30 kHz bandwidth at the earth station receiver. In addition, this assignment has no priority over either future meteorological-satellite systems (See G104) or terrestrial assignments authorized prior to April 26, 1994.
- S389--The bands 2390-2400, 2402-2417 and 4660-4685 MHz were identified for immediate reallocation, effective August 10, 1994, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective August 10, 1994, any Government operations in these bands are on a non-interference basis to authorized non-Government operations and shall not hinder the implementation of any non-Government operations.
- S390--This assignment for wideband telegraphy, facsimile and/or special transmission systems in the Maritime Mobile Service is being made in accordance with the NTIA Manual, Section 8.2.29, paragraph 5.c.(1) and ITU RR S52.170.
- S391--This assignment is an expansion or enhancement of an existing system in the 138-150.8, 162-174, or 406.1-420 MHz band which utilizes a band-width greater than 11 kHz.
- S392--The bands 2300-2310 and 2400-2402 MHz were identified for reallocation, effective August 10, 1995, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective August 10, 1995, any Government operations in these bands are on a non-interference basis to authorized non-Government operations and shall not hinder the implementation of any non-Government operations.
- S393--The band 2417-2450 MHz was identified for reallocation, effective August 10, 1995, for mixed Government and non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993.
- S395--The band 4635-4660 MHz was identified for reallocation, effective January 1, 1997, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective January 1, 1997, any Government operations in these bands are on a non-interference basis to authorized non-Government operations and shall not hinder the implementation of any non-Government operations. However, government operation of mobile (including airborne) systems authorized as of March 22, 1995 within 80km of Pico Del Este, PR (18° 16' N, 65° 46' W), Dam Neck, VA (36° 46' N, 75° 57' W), and St. Thomas, VI (18° 21' N, 64° 55' W) will be permitted on a fully protected basis until January 1, 2009.
- S396--This assignment is in accordance with Section 4.3.9, paragraph 6d, of the NTIA Manual.
- S397--This assignment is for a joint law enforcement requirement pursuant to Section 4.3.16 of this Manual.
- S398--This assignment is for a joint incident response requirement pursuant to Section 4.3.16 of this Manual.
- S399--Effective January 1, 2005, any Government operation in the band 162-174 MHz, not conforming to the 12.5 kHz channel plan, is on a non-interference basis to all operations that do conform to the 12.5 kHz channel plan in accordance with Section 4.3.7 of the NTIA Manual.
- S514--This assignment supports NASA Space Program ATS-3.
- S518--This assignment supports NASA Space Program ATS-1.
- S544--This assignment supports NASA Deep Space Program PIONEER.
- S545--This assignment supports NASA/Commerce Earth Exploration Service Space Program LANDSAT.
- S553--This assignment shall expire upon completion of Space Project Defense Meteorological Satellite Program Block 5.
- S558--This assignment shall expire upon completion of Space Project SAMSO 080-70.
- S566--This assignment shall expire upon completion of Space Project Advanced Technology Satellite Global Positioning System.
- S567--This assignment shall expire upon completion of Space Project Deep Space Program.
- S569--This assignment shall expire upon completion of Space Project Transit Improvement Program (TIP).
- S570--This assignment shall expire upon completion of Space Project FLEETSATCOM.
- S571--This assignment shall expire upon completion of Space Project LES 8/9.
- S572--This assignment shall expire upon completion of Space Project Air Force Satellite Data System.
- S574--This assignment supports NASA Space Program ISEE.
- S575--This assignment supports NASA Space Program TDRSS.
- S576--This assignment supports NASA Space Program Space SHUTTLE (ST*S).
- S578--This assignment supports NASA Space Program NIMBUS-7.
- S589--This assignment supports NASA Space Program IMP-8.
- S594--This assignment is for Space System GOES.
- S595--This assignment shall expire upon completion of Space Project GPS Phase II.
- S597--This assignment is in support of Navy Space Surveillance System.
- S603--This assignment is in support of Space Ground Link Subsystem (SGLS) operations.
- S604--This assignment is in support of foreign space operations.
- S606--This assignment shall expire upon completion of Space Project NATO IIIA.

S616--This assignment shall expire upon completion of Space Project DSCS Phase II.

S617--This assignment supports NASA Space Program SAR.

S619--This assignment is in support of the INTELSAT V.

S621--This Application is in support of a DOD Space Project.

S622--This assignment supports NASA Space Program DE-A.

S625--This assignment shall expire upon completion of Space Project IUS.

S626--This assignment shall expire upon completion of Space Project LEASAT (FLTSATCOM-A).

S627--This assignment is in support of the Small Business Satellite.

S629--This assignment is in support of Space System TIROS-N.

S632--This assignment supports NASA Deep Space Program VOYAGER.

S633--This assignment supports NASA Deep Space Program GALILEO.

S634--This note is to be used in conjunction with S604, to reflect assignments used by NASA in a cooperative effort with the European Space Agency (ESA) in support of Space Program ULYSSES (formerly known as the International Solar Polar Mission (ISPM)).

S641--This assignment supports NASA Space Program SPACE TELESCOPE (ST).

S642--This assignment supports NASA Space Program Solar Mesosphere Explorer.

S643--This assignment shall expire upon completion of Space Project DSCS Phase III.

S647--This assignment supports NASA Space Program ERBS.

S651--This assignment supports NASA Space Program Space Station.

S661--This assignment is in support of the Strategic Defense Initiative (SDI) Program.

S662--This assignment is for Common Carrier service provided in a non-Government Domestic Satellite System. The specific frequency and satellite is dependent upon the Common Carrier selected to provide the service.

S664--This assignment shall expire upon termination of the satellite system STATIONAR (USSR).

S665--This assignment is in the INMARSAT space system. If this assignment is for a transportable land-based or aeronautical INMARSAT terminal, it is subject to coordination with the Common Carrier Bureau of the Federal Communications Commission. This coordination will be conducted by the Communications Satellite Corporation in accordance with Annex E.

S666--This assignment is in support of Space Project NATO IV.

S668--This assignment supports NASA Space Program Tethered Satellite System (T*SS).

S669--This assignment supports the Volunteers in Technical Assistance (VITA) PACSAT space system.

S670--Non-Government testing of future INTELSAT satellites.

S671--This assignment supports the Orbital Sciences Corporation DATASAT Space System.

S673--This assignment supports NASA Space Program C^o*s*m*i*c Background Explorer (COBE) Satellite.

S674--This assignment supports NASA Space Program Atmospheric Research Satellite (UARS).

S676--This assignment supports NASA Space Program Advanced Communications Technology Satellite (ACTS).

S677--This assignment supports NASA Space Program Astronomical Shuttle Pallet Satellite (ASTRO-SPAS).

S678--This frequency supports AF/DOE Space Project ALEXIS.

S679--This assignment supports NASA Space Program Wideband Data Collection System.

S680--This frequency supports Commerce project Pan-Pacific Educational and Cultural Experiments by Satellite (PEACESAT).

S681--This assignment supports NASA Extra-Vehicular Activity UHF Communications Subsystem.

S683--This assignment supports NASA TOPEX/Poseidon (TOPO) Mission.

S684--This assignment supports NASA Space Program Solar Anomalous and Magnetospheric Particle Explorer (SAMPEX) in the Small Explorer (SMEX) Project.

S686--This assignment supports NASA Explorer Platform (EP).

S687--This assignment supports NASA Tether Dynamics Explorer/Tethered Atmospheric Probe (TDE/TAP).

S690--This assignment supports the LIGHT-SAT Satellite System.

S692--This assignment supports Motorola Satellite Communications, Inc.'s IRIDIUM space system.

S693--This assignment supports the NASA Telemedicine 18-Month Demonstration Project.

S694--This assignment supports NASA Commercial Experiment Transporter (COMET).

S695--This assignment supports Orbiter-ACTS Flight Experiment (O-AFE).

S696--This assignment supports NASA Tropical Rainfall Measurement Mission (TRMM).

S698--This assignment will expire upon completion of the Space Project NATO IV.

S700--This assignment supports NASA SeaStar Ocean Color Project.

S701--This assignment supports NASA Energy Transient Experiment (HETE).

S703--This assignment supports the NASA Summer Undergraduate Research Fellowship Satellites I and II (SURFSAT).

S704--This assignment supports the Interfero-metrics, Inc. Space System.

S706--This assignment supports the NASA Space Radar Laboratory 1 (SRL01).

S707--This assignment supports the German SAFIR System.

S708--This assignment supports the NASA Total Ozone Monitoring Spectrometer Earth Probe (TOMS-EP).

S709--This assignment supports the NASA MicroLab-1 mission.

S710--This assignment supports the MILSTAR Communications Satellite System.

S711--This assignment supports the NASA "Shuttle/MIR" Communications System.

S712--This assignment supports DOE proliferation detection and environmental monitoring satellite program.

S713--This assignment supports the NASA Fast Auroral Snapshot Explorer (FAST).

S714--This assignment supports the NASA Submillimeter Wave Astronomy Satellite (SWAS).

S715--This assignment supports the NASA International Solar Terrestrial Program (ISTP) Interplanetary Physics Laboratory WIND.

S717--This assignment supports the NASA Earth Observing System AM (EOS).

S719--This assignment supports the NASA Advanced Composition Explorer (ACE).

S720--This assignment supports the NASA Near Earth Asteroid Rendezvous (NEAR).

S721--This assignment supports the NASA MARS PATHFINDER Satellite System.

S722--This assignment supports the NASA CASSINI Satellite System.

S723--This assignment supports the NASA Advanced X-Ray Astrophysics Facility-Imaging (AXAF-I) Satellite System.

S724--This assignment is for commercial service using the Russian LOUTCH WSDRN Satellite.

S725--This assignment is in support of the Small Spacecraft Technology Initiative (SSTI) CLARK Satellite.

S726--This assignment supports the NASA X-Ray Timing Explorer (XTE).

S727--This assignment is in support of the HEALTHSAT-II Satellite.

S728--This assignment supports the NASA Lewis Satellite System.

S729--This assignment supports National Ocean Service experiments with TDRS 174W.

S730--This assignment supports the NOAA K, L, and M Satellite System.

S731--This assignment supports the NASA Polar Plasma Laboratory Satellite System - POLAR.

S732--This assignment supports the CTA Commercial Systems, Inc. space system.

S733--This assignment supports the EARTHWATCH Remote Sensing System.

S734--This assignment supports the E-SAT, Inc. space system.

S735--This assignment supports the NASA Student Nitric Oxide Explorer (SNOE) Satellite System.

S736--This assignment supports the NASA Tomographic Experiment using Radioactive Recombinative Ionospheric EUV and Radio Sources - TERRIERS.

S737--This assignment supports the Hughes Communications Galaxy, Inc. GALAXY VIII (I) Satellite.

S738--This assignment supports the NASA Mars Global Surveyor.

S739--This assignment supports the NASA Transition Region and Coronal Explorer satellite system (TRACE).

S740--This assignment supports the NASA Wide-Field Infrared Explorer satellite (WIRE).

S741--This assignment supports the NASA Lunar Prospector Satellite System.

S742--This assignment is for use by a U.S. Government earth station supporting a foreign space operation. The responsible Federal agency has waived the NTIA spectrum certification process for the earth station operation. Therefore, although this operation may be in accordance with the National Table of Frequency Allocations, it must be conducted on an unprotected, non-interference basis to those U. S. Operations that are in conformity with the National Table of Frequency Allocations.

S743--This assignment shall expire upon termination of the satellite system EXPRESS (Russia).

S744--This assignment shall expire upon completion of Space Project MIGHTYSAT.

S745--This assignment is in support of a Government Space Program.

S747--This assignment is for a receive only earth station for the IRS-1B Satellite.

S748--This assignment is for a receive only earth station for the IRS-1C Satellite.

S749--This assignment is for a receive only earth station for the ERS-2 Satellite.

S750--This assignment is in support of the Space Test Experiment Platform (STEP 0) program.

S751--This assignment supports the Orbital Sciences Corp. BATSAT MicroStar Spacecraft.

S752--This assignment supports the NASA Gravity Probe-B satellite system.

S753--This assignment supports the NASA International Space Station (ISS) VHF Voice Communications Link (IVVCL).

S754--This assignment is for a receive only earth station in the band 8025-8400 MHz for the Spot 1 and Spot 2 Satellite.

S755--This assignment supports the NASA SIMPLESAT Satellite System.

S758--This assignment is in support of the PANAMSAT PAS-8 and PAS-9 Satellites.

S759--This assignment supports the NASA Thermosphere-Ionosphere-Mesosphere-Energetics-Dynamics (Timed) Satellite System.

S760--This assignment supports the Ikonos-1 and Ikonos-2 Satellite System.

S761--This assignment supports the NASA Imager for Magnetopause-to-Aurora Global Exploration (IMAGE).

S762--This assignment supports the ICO Medium Orbit Satellite Constellation.

S763--This assignment is in support of a government program using a commercial contractor operating in the non-government space band. The license to operate is held by a non-government entity in support of this program. This record is incorporated into the Government Master File for spectrum analysis, and information purposes.

S764--This assignment supports the TELEDESIC Satellite System.

S765--This assignment supports the GLOBALSTAR Satellite System.

S767--This assignment supports the Orbview Space System.

S768--This assignment supports the NASA Microwave Anisotropy (MAP) Satellite System.

S769--This assignment is for a receive only earth station for the IRS-1D Satellite.

S770--This assignment is for an experiment using the Canadian MSAT Satellite System.

S771--This assignment supports the NASA Quikscat Satellite System.

S772--This assignment supports the NASA Lyman-Far Ultraviolet Spectroscopic Explorer (FUSE) Satellite System.

S773--This assignment supports the NASA X-38 201 Vehicle Communications System.

S774--This assignment supports the NASA Deep Space-1 (DS-1) Communications System.

S775--This assignment supports the NASA Active Cavity Radiometer Irradiance Monitor Satellite System (ACRIMSAT).

S776--This assignment supports the NASA Proximity Operations Communications Systems (POCS).

S778--This assignment supports the NASA Stardust Satellite System.

S779--This assignment supports the NASA Vegetation Canopy Lidar (VCL) Communications System.

S780--This assignment supports the NASA Earth Orbiter-1 (EO-1) Communications System.

S781--This assignment supports the NASA USAGenesis Communications System.

S782--This assignment supports the NASA Earth Observation System-PM (EOS-PM) Communications System.

S783--This assignment is in support of the NAHUEL-C Satellite System (Argentina).

S784--This assignment supports the NASA Cooperative Astrophysics and Technology Satellite (CatSat) Communications System.

S785--This assignment supports the NASA High Energy Solar Spectroscopic Imager (HESSI) Communications System.

S786--This assignment supports the NASA Galaxy Evolution Explorer (GALEX) Satellite Communications System.

S787--This assignment supports the NASA Ice, Cloud, and Land Elevation (ICESAT) Satellite Communications System.

S788--This assignment supports the NASA Space Infrared Telescope Facility (SIRTF) Communications System.

S789--This assignment supports the FCC Galaxy-11 Satellite System.

S790--This assignment supports the NASA X-38 201 Vehicle Communications System.

S791--This assignment supports the NASA Mars Surveyor 2001 Orbiter Communications System.

S792--This assignment supports the NASA Wire-less Video System (WVS) Communications System.

S793--This assignment supports the NASA Quick React Total Ozone Mapping Spectrometer (QUICKTOMS) Satellite Communications System.

S794--This assignment supports the NASA Triana Satellite Communications System.

S795--This assignment supports the HISPASAT-1C Satellite System.

S796--This assignment supports the Astrovision Satellite System.

S797--This assignment supports the NASA Solar Radiation and Climate Experiment (SORCE) Satellite Communications System.

S798--This assignment supports the NASA Space Shuttle Integrated Communications System (ICS).

S799--This assignment supports the NASA Swift Gamma Ray Medium Class Experiment (MIDEX) Satellite Communications System.

S800--This assignment supports the NASA Comet Nucleus Tour (CONTOUR) Satellite Communications System.

S801--This assignment supports the NASA C^o*s*m*i*c Hot Interstellar Plasma Spectrometer (CHIPS) Mission Satellite Communications system.

S802--This assignment is in support of the GE-4 Satellite system.

Endnotes for Annex A-F

¹ Applies to SSB transmissions.

² Applies to two or more independent sideband channels.

ANNEX G - LIST OF DOD-APPROVED SYSTEM IDENTIFIERS

This Annex was deleted in change 4.

ANNEX H

STANDARDIZED STATUS CODES USED FOR STATUS TRACKING

1. The following standard status codes are used in SFAF Data Item 903 to track the status of frequency assignment proposals within the FRRS Central Computer Facility (CCF) transaction processing system. These codes will be phased out when the CCF is replaced by SPECTRUM XXI. See SPECTRUM XXI codes listed in paragraph 2 below.

STATUS CODE	DESCRIPTION	SET BY
ACT	The proposal has been transferred to another DCF for coordination with other military services.	System
ASN	The proposal is approved, but last minute changes can be made to the record before setting the status to TRN.	User
ATE	The proposal has been successfully transferred to the JSC.	System
COR	The proposal is being held locally while some form of coordination is being conducted.	User
DUP	The proposal has been successfully download from the JSC CCF to the remote DCF MicroVAX site to reflect the decisions at the IRAC/FAS meeting.	System
ERR	The proposal with parsing errors has been received at the local site.	System
FAS	The validated proposal is ready for review by the agency's FAS representative (applies only to MILDEPs).	User
INC	The proposal is at NTIA and is being voted upon by other government agencies.	System
NTIA	The JSC has sent the proposal to NTIA.	System
PCM	The proposal has been downloaded to a PC for modification.	System
REC	The proposal has been received at the local site.	System
REJ	The proposal has been withdrawn from NTIA by the responsible agency.	System

Status

Code	Description	Set By
REV	The Proposal has been revised or edited.	User
RFN	The proposal is being converted by the JSC to the GMF format so it can be sent to NTIA.	System
RTA	The proposal was sent to the JSC and returned to the submitting agency because of errors serious enough to be rejected either by the JSC or by NTIA.	System
STA	Short term assignment.	User
TAB	The proposal has been tabled by NTIA or another government agency and is currently awaiting MILDEP FAS representative action.	System
TRN	The validated proposal is ready for transfer to the JSC or to another DCF.	User

2. The following standard status codes are used to track the status of records within the SPECTRUM XXI FRRS processing system. The following are brief descriptions of each code. (In this appendix, the term “Job Account” either refers to the actual Job Account or the corresponding user):

STATUS CODE	DESCRIPTION
ORIGINATED BY or IMPORTED BY	These codes identify the Job Account that originated (created) the proposal or imported the proposal into the software program.
COMPLIANCE	This code identifies that compliance was performed successfully or performed with errors and overridden.
COORDINATION	This code identifies the beginning and ending of manual (non-system related) coordination. The comment field is used to describe the coordination effort.
RECEIVED BY	This code indicates the proposal has been received by the given Job Account for processing.
IN-PROCESS AT	This code identifies the first time the proposal was loaded into the Proposal Editor by a Job Account. The intent is to identify when each Job Account began working on the proposal.

MODIFIED BY	This code identifies the last time the proposal was modified in the Proposal Editor.
APPROVED BY	This code indicates that a Job Account approved a proposal.
LATERAL COORDINATION	This code indicates that a record has been electronically laterally coordinated with other data-exchanging clients (Job Accounts). The Originator and Coordinators add their coordination comments into the record on the LATERAL COORDINATION line.
ASSIGNED BY	This code indicates that a Job Account has assigned a temporary or permanent proposal. (Technically a permanent proposal remains a proposal until it is sent to the FRRS (Frequency Resource Record System) Central Computer Facility (CCF) but according to the frequency management coordination process, a permanent proposal becomes an assignment the moment the user assigns it.)
REJECTED BY	This code indicates that a Job Account has rejected a proposal or that the proposal was automatically rejected during data exchange by a regional server.
SUBMITTED TO	This code is a request to submit the Permanent Proposal to NTIA (National Telecommunications and Information Administration) to become a Permanent Assignment.
TABLED BY	This code is used by NTIA only. It signifies that the proposal has been tabled for further discussion. (All "IRAC (Interdepartment Radio Advisory Committee)-reportable" Permanent Proposals are submitted to the NTIA for FAS (Frequency Assignment Subcommittee) approval. Approved Permanent Proposals become Permanent Assignments.)
DELETED BY	This code indicates that a Job Account has deleted a Permanent Assignment, Permanent Proposal, Temporary Assignment, or Temporary Proposal.
FORWARDED TO	This code indicates that the Job Account has requested the proposal be transferred from the current Job Account to another Job Account, usually on another platform.
INFO TO	This code indicates that a courtesy copy of the proposal was forwarded to the specified Job Account.

NOTIFIED BY

This code indicates that a Job Account has posted the Temporary Assignment to a regional server (or has requested that the Temporary Assignment be posted during the next data exchange). This posting serves to notify the community of the Temporary Assignment.

REGISTERED WITH

This code indicates that a request has been made to register a "non-IRAC reportable" record with the FRRS. (FRRS registration converts Permanent Proposals into Permanent Assignments.

ADMIN MOD BY

This code is placed on the proposal when an administrative modification is created and sent to the CCF.

ANNEX I – LIST OF DoD AGENCY SPECIFIC FUNCTION IDENTIFIERS

DoD has approved the following list of function identifiers for use in data items 511, 512, and 513. Data entries are always required in data items 511 and 512. Data Item 513 will be filled whenever an applicable data entry exists or at the discretion of the MILDEP or COCOM approval authority. Only the data shown in bold will be entered into computer databases. Non bold lower case data in parenthesis is only shown for information purposes to assist frequency managers in selecting the correct data entry. For example,

511. AIR OPERATIONS

512. NAVAIDS

513. ETCAS

Immediately following the table is a list containing the definitions for all the data entries contained within the table.

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
AIR OPERATIONS	AIR/AIR COMMUNICATIONS	
		A-EPLRS
		AIR DEFENSE/INTERCEPT
		BLUE ANGELS
		HAVE QUICK
		HELO CONTROL
		INSTRUCTOR/STUDENT TRAINING
		INTERPLANE
		PILOT-TO-PILOT
		REFUELING
		THUNDERBIRDS
	AIR/GROUND/AIR COMMUNICATIONS	
		AIR DEFENSE/INTERCEPT
		BROADCAST
		COMMAND POST
		FLIGHT FOLLOWING (Non-ATC)
		GOLDEN KNIGHTS
		HAVE QUICK
		PILOT-TO-DISPATCHER
		PILOT-TO-METRO
		SQUADRON/WING COMMON

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		SOF (SUPERVISOR OF FLYING)
		TRAINING
	AIR TRAFFIC CONTROL	
		APPROACH CONTROL
		ATIS (Auto Terminal Information Service)
		CLEARANCE DELIVERY
		DBRITE
		DEPARTURE CONTROL
		FEEDER CONTROL
		FLIGHT INSPECTION
		GCA
		GROUND CONTROL
		LOCAL CONTROL
		TOWER
	EXECUTIVE	
		AIR FORCE ONE
		AIRBORNE COMMAND CENTER
		COCOM/GENERAL OFFICER SUPPORT
		ERCS (Emergency Rocket Communications Sys)
		MYSTIC STAR
		NAOC (National Airborne Operations Center)
		NORAD
		WHCA (White House Communications Agency)
	FLIGHT TEST	
	NAVAIDS	
		AIR ROUTE SURVEILLANCE RADAR
		AIRPORT SURVEILLANCE RADAR
		BEACON

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		ETCAS (Enhanced Traffic Collision Avoid System)
		IFF/SIF
		ILS (instrument landing sys)
		MLS (Microwave Landing System)
		PAR (Precision Approach Radar)
		RF TAGS (Radio Frequency Tags and Interrogators)
		TACAN
		TCAS (Traffic Collision Avoidance System)
		VOR
		VORTAC
		WEATHER RADAR
	TELECOMMAND	
		COMMAND DESTRUCT/TERMINATION
		DRONE CONTROL
		MICROWAVE DATA LINK
		TMGS (Transportable Mobile Ground Subsystem)
		TOSS (TV Ordinance Scoring System)
	UAV (Unmanned Aerial Vehicle)	
	TRAINING	
	TARGET ACQUISITION	
		Longbow
		MISSILE
GROUND OPERATIONS	AIR DEFENSE	
		ARTILLERY
		AVENGER-STC
		FAADC2 (Forward Area Air Defense, Command and Control)
		LINEBACKER
		PATRIOT

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		SENTINEL (AN/MPQ-64 Surveillance Radar)
	ENGINEERS	
		GRIZZLY (M1 Breacher MineSweeper)
		M93A1 FOX
		WOLVERINE (Assault Bridge)
	ARTILLERY	
		AQF (Advanced Quick Fix)
		LLDR (Lightweight Laser Designator Rangefinder)
		MLRS (Multiple Launch Rocket System)
	BATTLE COMMAND	
		A2C2S (Army Airborne Command & Control System)
		A-EPLRS (SADL)
		CTT (Commander's Tactical Terminal)
		EPLRS (Enhanced Position Location Reporting System)
		LAND WARRIOR
		NTDR (Near Term Digital Radio)
		SCAMP (Single Channel Anti-Jam Manportable Terminal)
		SINCGARS (Single Channel Ground and Airborne Radio System)
		SINCGARS-ASIP (Single Channel Ground and Airborne Radio System-Advanced System Improvement Plan)
		WIN-T (Warfighter Information Network-Tactical)
	CAVALRY	
		STRIKER II (Advanced Fire Support/Scout/Surveillance System)
	CLOSE AIR SUPPORT (CAS)	
	COMBAT CONTROL TEAM	

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
	COMMAND POST	
	ELECTRONIC WARFARE	
		ACS (Aerial Common Sensor)
		AHFEWS (Army HF EW System)
		ARL (Aerial Reconnaissance-Low)
		IEWCS (Intelligence Electronic Warfare Common Sensor)
		LMRDFS (Light Man-portable Radio Direction Finding System)
		TACJAM (Tactical Communications Jamming System)
		TEAMMATE
		TRACKWOLF
	FIRE SUPPORT	
		AFATDS
		ARTILLERY
		CLOSE AIR SUPPORT (CAS)
		MFCS (Mortar Fire control System)
	FORWARD AIR CONTROL POST	
	GROUND INTERDICTION	
		CIWS (Close-In Weapons System)
		GBCS-L (Ground Based Common Sensor-Light)
		GSR (Ground Surveillance Radar)
		I-REMBASS (Improved-Remotely Monitored Battlefield Sensor System)
		TRAILBLAZER (Ground Based Communications Intelligence System)
	INFANTRY	
	INTELLIGENCE	
		ASAS (All Source Analysis System)
	TACCS	
	TRAINING	

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
SEA OPERATIONS	ESWC (ELECTRONIC WARFARE)	SONOBUOY
	FLEET SUPPORT	
	FORACS (Fleet Operational Readiness Accuracy Check Site)	
	INTELLIGENCE	
		TARGET
	SURFACE NAVAIDS	
		NAVIGATION RADAR
	RESUPPLY	
	SHIP/AIR OPERATIONS	
	SHIP/SHIP	
		AEGIS
		BF EMAIL
		HYDRA
	SHIP/ShORE OPERATIONS	
		ATFP
		HARBOR-PORT OPERATIONS
		NAVAL GUNFIRE SUPPORT
	TRAINING	
SPACE OPERATIONS	EXPERIMENTAL	
	GBS (GLOBAL BROADCAST SYSTEM)	
	GPS (GLOBAL POSITIONING SYSTEM)	
	METEOROLOGICAL	
		DMSP (Defense Meteorological Satellite Program)
		SAWDS (SATELLITE AUTOMATED WX DIST SYS)
	NASA	
		SHUTTLE
	EXPERIMENTAL	
	FLIGHT TEST	
		OCCS SUPPORT

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		RDMS (Range Data Management Subsystem)
		TELEMETRY
		TRUNKING
	SAFETY	
	SIMULATOR (S371 required)	
	TEST RANGE	
		TARGET
		TARGET SCORING
		TEST RANGE TIMING
		TCRS (Target Control System)
		TOSS (TV Ordinance Scoring System)
	TRAINING	
		MITT/DTES (Mobile Integrated Tactical Terminal/Distributed Common Ground System Test and Evaluation Strategy)
SURVEILLANCE/ RECONNAISSANCE	AIR DEFENSE WARNING	
		AWACS (Airborne Warning & Control Sys)
		BMEWS (Ballistic Missile Early Warning System)
		CARS (Contingency Airborne Reconnaissance Sys)
		GRCS (Guardrail Common Sensor)
		JSS (JOINT SURVEILLANCE SYSTEM)
		OTHR/ROTHR (Over-the-Horizon Radar)
		PAVE PAWS
	TRAINING	
SPECIAL OPERATIONS	AIR FORCE SPECIAL OPERATIONS	
	ARMY SPECIAL OPERATIONS	
		CIVIL AFFAIRS
		PSYCHOLOGICAL OPERATIONS
		RANGER UNITS

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		SPECIAL FORCES
	NAVY SPECIAL OPERATIONS	
C3 (Command, Control & Communications)	COMMAND NET	
		GLOBAL
		GLOBAL ALE (Automatic Link Establishment)
		GLOBAL BLACK
		GLOBAL DISCRETE
		GLOBAL RED
		HICOM (High Command)
	DATA LINK	
		ARTS (Automated Remote Tracking System) (Telemetry)
		JTIDS/MIDS
		SGLS (Space Ground Link Subsystem)
		TADIL-A
		TADIL-C
	COMMUNICATIONS	
		IONOSPHERIC SOUNDER
		ISYSCON (Integrated System Control)
		MARS (Military Affiliated Radio System)
		MICROWAVE
		MSE (Mobile Subscriber Equipment)
		RADIO RELAY
		TACTS (Tactical Trunk Signaling)
	GCCS (Global Command & Control System)	
	SATELLITE COMMUNICATIONS	
		AFSATCOM
		DSCS
		FLTSATCOM
		LEASAT
		MILSTAR

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		SPITFIRE (SPITFIRE Manpack UHF SATCOM DAMA Terminal)
		TROJAN SPIRIT
	TELEMETRY	
		ARTS
		SGLS
SUSTAINING OPERATIONS	ADMINISTRATIVE	
		BROADCAST
		INSTALLATION PA SYSTEM (Giant Voice)
		PAGING
		TRAVELERS INFORMATION SYSTEM
		UNLICENSED DEVICE
		WIRELESS LOCAL AREA NETWORK
		WIRELESS MIKE
	CIVIL ENGINEERING	
		CIVIL WORKS
		CONSTRUCTION
		INDUSTRIAL CONTROLS
		PRIME BEEF
		PUBLIC WORKS
		RED HORSE
		SAFETY
		SEABEES
		UTILITIES
	COMMAND AND CONTROL	
		BASE OPERATIONS
		COMMAND NET
		MOMS
		TRUNKING
	EMERGENCY SERVICES	
		ALARM SYSTEMS
		DISASTER PLANNING
		EOD
		FIRE

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		HAZMAT
		MEDICAL
		WARNING SYSTEM
	ENVIRONMENTAL	
		RESOURCES CONSERVATION
	LAW ENFORCEMENT	
		CID (Criminal Investigation Command)
		DIS (DEFENSE INVESTIGATIVE SERVICE)
		MILITARY POLICE
		NCIS (NAVAL CRIMINAL INVESTIGATIVE SERVICE)
		OSI (OFFICE OF SPECIAL INVESTIGATIONS)
		SCOPE SHIELD
		SECURITY FORCE
		SHORE PATROL
		SPEED MEASUREMENT SYSTEMS
		SURVEILLANCE SYSTEMS
		TETHERED AEROSTAT RADAR
		WEAPONS STORAGE PROTECTION
	MAINTENANCE	
		AIRCRAFT
		COMMUNICATIONS
		EQUIPMENT CHECKS
		MISSILE
		MUNITIONS
		RAMP CONTROL
		REMOTE CONTROL CRANE
		RUNWAY ICE DETECTION SYSTEMS
		SNOW REMOVAL
	METEOROLOGICAL	
		AMSS (Automatic Meteorological Sensor System)
		ASOS (Auto Surface Observation System)
		AWOS
		GOES (Geostationary Operational Environmental Satellites)

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		IMETS (Integrated Meteorological System)
		NEXRAD
		WEATHER
		WIND PROFILER
	NATURAL RESOURCES	
		CONSERVATION
		WILDLIFE PRESERVATION
	NAVAIDS CONTROLS	
		REMOTE BARRIER CONTROL SYSTEMS
		RUNWAY LIGHTING CONTROL
	SUPPLY AND LOGISTICS	
		AMPS (Air Movement Planning System)
		CSSCS (Combat Service Support Control System)
		INVENTORY/INVENTORY CONTROLS
		MTS (Movement Tracking System)
		POL
		RESUPPLY
		RF TAGS
		SHIPYARD
	TRAINING	
	TRANSPORTATION	
		MOTOR POOL
		TAXI
DOMESTIC SUPPORT OPERATIONS	COMMUNITY ASSISTANCE	
		AERO CLUB
		COLOR/HONOR GUARD
		EDUCATION
		MUTUAL AID
		PUBLIC WORKS
		TRAINING
	CONTINGENCY	
	CONSEQUENCE MANAGEMENT	
		CBR

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
		CIVIL SUPPORT TEAM
		ENVIRONMENTAL CLEANUP
		FEMA
		HAZARDOUS MATERIAL RELEASE
		TECHNICAL ESCORT UNIT
		TRAINING
	LAW ENFORCEMENT	
		ANTI-TERRORISM
		CIVIL DISTURBANCES
		COUNTER DRUG
		PROJECT COTHEN
		SPECIAL SECURITY OPERATIONS
OTHER OPERATIONS		
	DTSS (Digital Topographic Support System)	
	EXERCISE	
	EXPERIMENTAL	
	ETRAC (Enhanced Tactical Radar Correlator)	
	HYDROLOGIC	
		LOCKS AND DAMS
	RDTE SUPPORT	
	SEARCH AND RESCUE	
		CAP (Civil Air Patrol)
	SEISMIC	
	SPECIAL COURIER	
	SPECIAL PROJECTS	
		HAARP (High Frequency Active Auroral Research Program)
	SURVEY	
	TEST AND MEASUREMENT	

2. The definitions for the data entries contained in the above table are provided below:

A2C2S (Army Airborne Command & Control System)--Used in support of Army Airborne Command & Control System.⁵

ACS (Aerial Common Sensor)--Used in support of Intelligence and Electronic Warfare operations.⁵

ADMINISTRATIVE--Used for administrative management of personnel and/or material.

AEGIS--Used in support of AEGIS cruisers and destroyer weapon system operations.

A-EPLRS--Used in support of the Airborne Enhanced Position Location Reporting System (A-EPLRS), a secure, electronic warfare (EW)-resistant tactical transmission system supporting the Army Tactical Command and Control System (ATCCS) and the Army Battle Command System.

AERO CLUB--Used in support of flight training and recreational flying clubs.

AFATDS--Used in support of Advanced Field Artillery Tactical Data System.⁵

AFSATCOM--Used for voice and/or data transmissions over the AFSATCOM system

AHFEWS (Army HF EW System)--Used in support of Intelligence and Electronic Warfare operations.⁵

AIR DEFENSE / INTERCEPT--Used in support of fire finding exercises and operations.⁴

AIR DEFENSE WARNING--Used to identify the presence of hostile aircraft and or missiles.¹

AIR DEFENSE--Used in supporting those defensive measures designed to destroy attacking enemy aircraft or missiles in the Earth's envelope of atmosphere, or to nullify or reduce the effectiveness of such attack.

AIR FORCE ONE--Used in support of presidential aircraft operations.

AIR FORCE SPECIAL OPERATIONS--Used to support AFSOF units (special operations wings and groups, special tactics groups, and special operations weather teams) which provide aircraft and other support for a variety of SOF missions.³

AIR OPERATIONS--Used in supporting those functions which typically originate from the air and/or directly support the launching of, actual conduct of, and returning of airborne forces carrying out air operations whether over land or sea.

AIR ROUTE SURVEILLANCE RADAR--Used for radar's that monitor aircraft routes.²

AIR TRAFFIC CONTROL--Used for ground-air and air-ground voice communications dedicated to controlling the movement of aircraft.

AIR/AIR COMMUNICATIONS--Used in supporting voice and/or data transmissions between two airborne platforms.¹

AIR/GROUND/AIR COMMUNICATIONS--Used supporting voice and/or data transmissions between airborne and ground-based platforms.¹

AIRBORNE COMMAND CENTER--Used by airborne command post aircraft in support of the national authority or COCOMs.²

AIRCRAFT--Used in supporting air operation under the jurisdiction of the Department of the Army.⁴

AIRPORT SURVEILLANCE RADAR--Used for general coverage radars that are located at airdromes.

ALARM SYSTEMS--Used for physical security (e.g., Sensors, Motion Detectors, Intrusion & Duress Alarms, Etc).

AMPS (Air Movement Planning System)--Used in support of Air movement operations.⁶

AMSS (Automatic Meteorological Sensor System)--Used in support of Intelligence and Electronic Warfare operations.⁵

ANTI-TERRORISM--Used in direct support of anti-terrorism.

APPROACH CONTROL--Used to provide a pilot conducting flight in accordance with instrument flight rules to commence an approach to an airport.¹

AQF (Advanced Quick Fix)--Used in direct support of command and control, fire control nets, also used for ground surveillance, counter/mortar, and counter/battery operations.⁵

ARL (Aerial Reconnaissance-Low)--Used in support of Intelligence and Electronic Warfare operations.⁵

ARMY AVIATION--Used in supporting the operation of fixed- and rotary- winged aircraft maintained by the Army; includes but is not limited to attack helicopters, scout helicopters, and utility aircraft

ARTILLERY--Used to provide internal command, control, and communications to division and below for fire support.⁴

ARTS (Automated Remote Tracking System) (Telemetry)--Used in conjunction with the Space Ground Link Subsystem (SGLS).

ASAS (All Source Analysis System)--Used in support of Intelligence and Electronic Warfare operations.⁵

ASOS (Automated Surface Observation System)--Used for the collection of weather information used by civil and military aircraft.

ASW (Anti-Submarine Warfare)--Used in support of anti-submarine warfare operations.

ATIS (Auto Terminal Information Service)--Used for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

ATFP (Anti-Terrorism Force Protection) – Communications used in supporting fleet Anti-Terrorism Force Protection.

AVENGER-STC--Used in support of Short Range Air Search Radar (Stringer) operations.⁶

AWACS--Used in supporting special DoD airborne early warning aircraft that are equipped with search and height-finding radar and communications equipment for controlling weapon systems and performs the air surveillance and control mission.

AWOS-- Automatic Weather Observing System: Observes weather conditions at specific location and transmits continuously to aircraft in the area.

BASE OPERATIONS--Used in supporting the operations of an Air Terminal; a facility on an airfield that functions as an air transportation hub and accommodates the loading and unloading of airlift aircraft and the in-transit processing of traffic.

BATTLE COMMAND--Used in support of command, control, and communications, tactical Internet, and Warfighter Information Network/Satellite networks.⁶

BEACON--Used in supporting Marker Beacons, Aeronautical Radio Beacons, and Radar Beacons for radio navigation land stations.⁴ Includes Non Directional Beacons (NDR)

BF EMAIL (Battle Force Email) -- Used in supporting email communications between ships. This includes email communications with ships from coalition partners.

BLUE ANGELS--Used in support of the Navy BLUE ANGELS demonstration team.

BMEWS (Ballistic Missile Early Warning System)--Used in DoD's electronic system for providing detection and early warning of attack by enemy inter-continental ballistic missiles.²

BROADCAST--Used to support broadcasting signal via Television and/or Radio service.⁶

C3 (Command, Control, & Communications)--Used in supporting those strategic, inter-/intra-theater, or inter-/intra service C3 functions NOT already covered under another category.

CAP (Civil Air Patrol)--A private corporation that can be activated by HQ AF to conduct SAR operations.

CARS (Contingency Airborne Reconnaissance System)--Used in support of Airborne Reconnaissance operations.⁶

CAVALRY--Used in supporting those ground elements whose missions are reconnaissance, security, and economy of force; to find the enemy, to develop the situation and to provide the commander with reaction time and security.³

CBR (Chemical, Biological, Radiological)— Chemical, biological, and radiological teams that respond to terrorist incidents in order to assist local, state, or Federal agencies in the conduct of post-incident mitigation actions.

CID – Used in support of U.S. Army (Criminal Investigation Command) CID operations.⁶

COCOM/GENERAL OFFICER SUPPORT--Used in support of command and control, and logistics, supporting COCOMs/General Officers.⁶

CIVIL AFFAIRSUsed for command activities centered on relationship between military forces and civil authorities and citizens in a friendly or occupied country or area. Command performance of certain functions or exercise of certain authority normally the responsibility of the local government.

CIVIL DISTURBANCES--Used to support civil disturbance operations.

CIVIL ENGINEERING-- Used to support civil engineering activities.²

CIVIL WORKS--Used to support civil works activities.²

CIWS (Close-In Weapons System)--Used in support of weapon system.⁶

CLEARANCE DELIVERY--Used by air traffic control tower staff to communicate departure instructions to air crews while the aircraft are still on the ground.²

CLOSE AIR SUPPORT (CAS)--Used in supporting air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces.

COLOR/HONOR GUARD--Used to support military color guard/honor activities.

COMBAT CONTROL TEAM--Used in support of Intelligence, Maneuver, Fire Support, Air Defense, Mobility and Survivability, Logistics and Battle Command.⁵

COMMAND AND CONTROL--Used for command and control of military operations.²

COMMAND DESTRICT/TERMINATION--Used by range safety officers to destroy errant missiles or UAVs.

COMMAND NET--Used for command and control of the Commanders Net.⁶

COMMAND POST/CENTER--Used in supporting Command, Control, and Communications at the Command Post (CP).⁴

COMMAND POST--Used in supporting Command, Control, and Communications at the Command Post (CP).⁴

COMMUNICATIONS--Used in supporting the collection by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or supporting the passing of data concerning the communications characteristics of a particular area.²

COMMUNICATIONS--Used to support fixed point to point communications links.

COMMUNITY ASSISTANCE--Used to support non-specific community assistance activities.

CONSEQUENCE MANAGEMENT--Used to support U.S. government interagency assistance to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the results of a terrorist incident involving weapons of mass destruction.

CONSERVATION--Used to support resources conservation activities.

CONSTRUCTION--Used to support construction activities (e.g. road building, erection of power lines, construction of dams or bridges, etc.).

CONTINGENCY--Used only during unusual situations (e.g. civil disturbances, communications outages, natural disasters, etc.), and kept in service only for the duration of the contingency.

COUNTER-DRUG--Used in direct support of counter drug operations.

CSSCS (Combat Service Support Control System)--Used by computer software system designed to assist commanders in the planning of Logistics operations.⁵

CTT (Commander's Tactical Terminal)--Used to support Command Post operations.

DATA LINK--Used in support of the operation of a data link.

DBRITE (Digital Bright Radar Indicator Tower Equipment)--Used for DBRITE operations.⁶

DEPARTURE CONTROL--Used in controlling aircraft departing from airdromes until they are turned over to air route controllers or go on visual flight rules.²

DIS (Defense Investigative Service)--Used by DIS organizations.

DISASTER PLANNING--Used in direct support of disaster operations.⁶

DMSP (Defense Meteorological Satellite Program)--Used in direct support of the Defense Meteorological Satellite Program.⁶

DOMESTIC SUPPORT OPERATIONS--Used for various types of military support provided to Federal, state, and local agencies in the areas of disaster assistance, environmental assistance, law enforcement, and community assistance.

DRONE CONTROL--Used in direct support of drone control operations.

DSCS (Defense Satellite Communication System)--Used for voice and/or data transmissions over the Defense Satellite Communication System.

DTSS (Digital Topographic Support System)--Used in direct support of DTSS operations.

EDUCATION--Used for military education activities.

ELECTRONIC WARFARE--Used in supporting the collection by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or supporting the passing of data concerning the electronic characteristics of a particular area.²

EMERGENCY SERVICES--Used in support of non-specific emergency services.²

ENGINEERS--Used in supporting Engineers that perform construction, demolition, surveying, road and bridge building, and camouflage for the Army.⁴

ENVIRONMENTAL CLEANUP--Used to support environmental cleanup operations.²

ENVIRONMENTAL--Used to support environmental controls, surveys, and research operations.⁵

EOD (Emergency Ordinance Disposal)--Used in supporting EOD during destruction or demolition operations.⁴ This includes EOD robotic devices.

EPLRS (Enhanced Position Location Reporting System)--Used in support of EPLRS or advanced A-EPLRS system.⁵

EQUIPMENT CHECKS--Used to support equipment checks made prior to commencing normal operations.

ERCS (Emergency Rocket Communications Systems)--Used to support the Emergency Rocket Communication System or ECM Resistant Communications System.⁴

ETCAS (Enhanced Traffic Collision Avoidance System)--Used by aircraft equipped with the ETCAS equipment.

ETRAC (Enhanced Tactical Radar Correlator)--Used to support tactical Radar operations.²

EXECUTIVE--Used by the top echelon leadership of a government agency (e.g. normally used at department level and above where strategic policy is formulated).

EXERCISE--Used in supporting a military maneuver or simulated wartime operation involving planning, preparation, and execution.

EXPERIMENTAL--Used in supporting activities that require an experimental station class.

FAADC2 (Forward Area Air Defense, Command and Control)--Used for forward air defense operations.

FEEDER CONTROL-- Feeder control transitions aircraft from the en route structure to the initial approach fix for landing.

FEMA (Federal Emergency Mgt Agency)--Used to support FEMA (Federal Emergency Mgt Agency) operations.

FIRE SUPPORT--Used to support artillery in support of infantry, armored, airborne, and airborne mobile operations.

FIRE--Used to notify the presence of a fire, or to direct, control, or coordinate the operations of fire response vehicles, equipment, and personnel during fire suppression or fire prevention activities.

FLEET SUPPORT--Used to support fleet units/shore facilities.

FLIGHT FOLLOWING-- Issues information and advisories to arriving, departing, and en route aircraft and monitors the flight progress of aircraft. Additionally, flight following posts and relays flight progress reports and posts information to flight data strips, boards, charts and maps.

FLIGHT INSPECTION— Normally accomplished by Federal Aviation Administration (FAA) flight check aircraft to determine if specific navigation aids (NAVAIDS) such as NDB, VOR, TACAN, are functioning properly.

FLIGHT TEST--Used to support flight test operations.

FLTSATCOM (Fleet Satellite Communications)--Used for voice and/or data transmissions over the FLTSATCOM system.

FORACS (Fleet Operational Readiness Accuracy Check Site)--Used to support Fleet Operational Readiness Sites.

FORWARD AIR CONTROL POST--Used in supporting a highly mobile USAF tactical air control system radar facility subordinate to the control and reporting center and or control post used to extend radar coverage and control in the forward combat area.³

GBCS-L (Ground Based Common Sensor-Light)--Used to support the ground based sensor system.⁵

GBS (Global Broadcast System)--Used for voice and/or data transmissions over the Satellite system.⁴

GCA— Ground Controlled Approach System: A radar approach system for aircraft arriving at an airfield.

GCCS-A (Global Command & Control System-Army)--Used to support Army GCCS operations.⁵

GLOBAL ALE (Automatic Link Establishment)--Used in supporting ALE operations within the DoD global communications network.

GLOBAL BLACK--Used in support of the USAF Global HF Network for a non-secure email net.

GLOBAL DISCRETE--Unpublished (non-FLIP) HF frequencies assigned to DoD global communications network.

GLOBAL RED--Used in support of the USAF Global HF Network secure email net.

GLOBAL--HF frequencies assigned to DoD global communications network.

GOES (Geostationary Operational Environmental Satellites)--GOES is a series of meteorological geostationary orbiting satellites that provide weather prediction data for the Western Hemisphere and particularly for the U.S.

GOLDEN KNIGHTS--Used by the Army's Golden Knights demonstration team.

GPS (Global Positioning System)--Used for precise positioning/navigation information.⁴

GRCS (Guardrail Common Sensor)--Used in support collection and location system.⁵

GRIZZLY (M1 Breacher MineSweeper)--Used to support mine sweeping operations using CNR.⁶

GROUND CONTROL--Used in supporting those functions which controls originate from the ground and directly support ground-based operations.⁴

GROUND INTERDICTION--Used to support ground operations, convoy, scouting, surveillance etc.⁶

GROUND OPERATIONS--Used in supporting those functions which originate from the ground and directly support ground-based operations.

GSR (Ground Surveillance Radar)--Used to support ground surveillance radar operations.⁶

HAARP (High Frequency Active Auroral Research Program)--A scientific endeavor to study the properties and behavior of the ionosphere to understand its use to enhance communications and surveillance systems for both civilian and military purposes.²

HARBOR-PORT OPERATIONS--Used for controlling movements of ships in harbors and ports.²

HAVE QUICK--Used in supporting DoD's Jam-resistant UHF Communications Radio.²

HAZARDOUS MATERIAL RELEASE--Used to support hazardous material release.

HAZMAT (Hazardous Materials)--Used to support operations dealing with hazardous materials.

HELO CONTROL--Used to control and coordinate helicopter transit between ships.

HICOM (High Command)--Used to support COCOM HF high command net.

HYDRA (Hierarchical Yet Dynamically Reprogrammable Architecture) -- Used in support of various shipboard voice communications requirements.

HYDROLOGIC--Used for collection of information regarding the waters of the earth and its atmosphere, or for the control and management of these waters.

IEWCS (Intelligence Electronic Warfare Common Sensor)--Used in support of Intelligence and Electronic Warfare operations.⁵

IFF/SIF--Used to support Identification Friend or Foe/Selective Identification Features activities.

ILS (Instrument Landing System)--Used to support VOR and glideslope aircraft Instrument Landing Systems.

IMETS (Integrated Meteorological System)--Used to support the collection of weather reports.⁵

INDUSTRIAL CONTROLS--Used to support industrial controls.²

INFANTRY--Used in supporting those ground-based elements designed to close with and destroy the enemy and which serve as a key element of combat power in close combat.³

INSTALLATION PA SYSTEM (Giant Voice)--Used by installation public address systems.²

INSTRUCTOR/STUDENT TRAINING--Used in supporting those activities during training which originate from the class room instructions. Mainly used for training purposes.⁴

INTELLIGENCE--Used in support of the gathering of intelligence information.

INTERPLANE--Used between aircraft in flight.

INVENTORY/INVENTORY CONTROLS (e.g., Optical Scanners, RF Tags, NISTARS (Navy Integrated Storage Tracking & Retrieval System)--)--Used in support of gathering inventory data at exchange, supply, and other logistical type facilities.

IONOSPHERIC SOUNDER--Used in support of ionospheric sounder operations.

I-REMBASS (Improved-Remotely Monitored Battlefield Sensor System)--Used to support ground surveillance operations.⁵

ISYCON (Integrated System Control)--Used to manage multiple tactical communications systems.⁵

JSS (Joint Surveillance System)--Used in supporting the Joint Surveillance System Radars.²

JTIDS/MIDS (Joint Tactical Information Distribution System)--Used in support of the operation of JTIDS.⁵ Used in support of the operation of Link 16 Command and Control Tactical Data Systems. Also known as TADIL-B.

LAND WARRIOR--Used to support combat net radio operations for Corps and below.⁶

LAW ENFORCEMENT--Used to direct, control, or coordinate the activities of personnel engaged in law enforcement duties (e.g. building and installation security, criminal investigations, police activities, intelligence and counter-intelligence operations, intruder detection, etc).

LEASAT (Leased Satellite)--Used for voice and/or data transmissions over the LEASAT system.

LINEBACKER--Used to operate in forward combat areas, the Linebacker is capable of shooting down rotary- and fixed-wing aircraft, as well as cruise missiles.

LLDR (Lightweight Laser Designator Rangefinder)--Used in support of range finding operations.⁵

LMRDFS (Light Man-portable Radio Direction Finding System)--Used to support direction finding system.⁵

LOCAL CONTROL--Used by air traffic controllers in the vicinity of an airdrome.

LOCKS AND DAMS--Used in direct support of the operation of locks and dams.

Longbow (Apache Helicopter)--Used by the weapons radar on Apache helicopters.⁶

LOOTING PREVENTION--Used in direct support of looting prevention.

M93A1 FOX--Used to support Bridge operations.⁶

MAINTENANCE--Used to support maintenance activities (e.g. resurfacing of roads, maintenance of power lines, repair of dams or bridges, etc).

MARS (Military Affiliated Radio System)--Used for voice and/or data transmissions over the Military Affiliated Radio System.

MEDICAL--Used to direct, control, or coordinate the activities of medical personnel and emergency response vehicles.

METEOROLOGICAL--Used in supporting the collection by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or supporting the passing of data concerning the meteorological characteristics of a particular area.²

MFCS (Mortar Fire control System)--Used to support command and control of Mortar Fire Control operations.⁵

MICROWAVE DATA LINK--Used in supporting the microwave data links.⁴

MICROWAVE--Used to support Microwave data links.⁴

MILITARY POLICE--Used to support security operations, military laws, orders and regulations, traffic control, crime prevention, investigations, logistics, coordination, and planning of police functions.⁴

MILSTAR (Military Strategic and Tactical Relay System)--Used for voice and/or data transmissions over the MILSTAR system.

MISSILE--Used in supporting electronic fire distribution system designed for CONUS use in coordinating all elements of air defense from target detection to target destruction.⁴

MITT/DTES (Mobile Integrated Tactical Terminal/Distributed Common Ground System Test and Evaluation Strategy)--Used to support mobile tactical terminal.⁵

MLRS (Multiple Launch Rocket System)--Used to support the flight parameters of its main carrying missiles and submissiles.²

MLS (Microwave Landing System)--Used to support Microwave Landing Systems.

MOMS (Man on the Move System)--Used in support of Man on the Move System operations.

MOTOR POOL--Used to support the motor pool.⁴

MSE (Mobile Subscriber Equipment)--Used to provide secure, automatic digitized voice, data, and facsimile communications to the users, whether static or mobile operations.⁵

MTS (Movement Tracking System)--Used to support the movement of personnel and equipment.⁵

MUNITIONS--Used in support of the storage or movement of munitions.

MUTUAL AID--Used for fire, medical, police, and other emergency services between federal, state and local agencies.

MYSTIC STAR--Used to support the president of the US and senior federal executives.

NAOC (National Airborne Operations Center)--Used in direct support of NAOC operations.

NASA--Used in support of NASA operations.

NATURAL RESOURCES--Used for the management, protection, and conservation of natural resources (e.g. national forests, public lands, wildlife, etc).

NAVAIDS CONTROLS--Used to activate and deactivate visual or electronic navigational aids (e.g. runway lights, radio beacons, unmanned lighthouses, etc).

NAVAIDS--Used to furnish navigational assistance to aircraft (e.g. instrument landing system (ILS), nondirectional beacon (NDB), long-range navigation (LORAN), etc).

NAVAL GUNFIRE SUPPORT--Used in direct support of Naval Gunfire Support Operations.

NAVIGATION RADAR--Used for radar navigation in reduced visibility to assist the operator in determining the range and bearing to obstructions (e.g., other craft or buoys), avoiding obstacles, avoiding collisions, accessing the bank of a river or shore, and as an aid to maintain a vessel in a channel to avoid running aground.

NAVY SPECIAL OPERATIONS--Used for special, focused warfare operations conducted by Navy Sea, Air, Land (SEAL) teams, SEAL Delivery Vehicle Teams, and Special Boat Units (SBU) under the cognizance of the Naval Special Warfare Command.

NCIS (Naval Criminal Investigative Service)--Used by Naval Criminal Investigative Service organizations.

NDB--A signal (beacon) transmitting on a select frequency which is used by aircraft to determine their location in relation to the beacon signal. May serve as a guide to an airfield or location.

NEXRAD--Used in support of the Next Generation Weather Radar (NEXRAD).

NORAD (North American Aerospace Defense Command)--Used by the North American Aerospace Defense Command.

NTDR (Near Term Digital Radio)--Used to support the Army's data communication backbone for platoon to brigade.⁵

OCCS SUPPORT--Used for communications support of Observer Controller Communication System (OCCS) programs and projects.

OSI (Office of Special Investigation)--Used by Office of Special Investigation organizations.

OTHER OPERATIONS--Used in supporting those functions not covered in one of the categories listed above.

OTHR/ROTHR (Over-the-Horizon Radars)--Used in supporting the OTHR. Some systems are relocatable.²

PAGING--A one-way communications system used for selective calling of personnel. (Note: Although paging systems may be used in direct support of functions shown on this list, such as EXECUTIVE or MEDICAL, all paging assignments shall show PAGING as the function name.)

PAR (Precision Approach Radar)--Used for Precision Approach Radar operations.⁶

PATRIOT--An air defense missile system.

PAVE PAWS (Precision Acquisition Vehicle Entry Phased Array Warning System)--Used in supporting the Precision Acquisition Vehicle Entry Phased Array Warning System

PILOT-TO-DISPATCHER--Used between the base operations dispatcher and air crews.

PILOT-TO-METRO--Used between the base weather facility and air crews.

PILOT-TO-PILOT--Communication between air crews in flight.

POL (Petroleum, Oil, and Lubricants)--Used to support POL activities during exercises and operations.⁴

PRIME BEEF--Used in support of the Prime Beef construction team.²

PROJECT COTHEN--Federal Anti-Drug Operations.

PSYCHOLOGICAL OPERATIONS--Used for planned psychological activities in peace and war directed to enemy, friendly, and neutral audiences to influence attitudes and behavior affecting achievement of political and military objectives.

PUBLIC WORKS--Used to support public works.²

RADIO RELAY--Used in supporting signal communication system using very high frequencies and line of sight radio transmitters and receivers in lieu of trunk wire circuits. This system, when used in conjunction with carrier equipment, will provide channels for both voice and Teletype operations.⁴

RAMP CONTROL--Used to control the movement of aircraft and vehicle traffic on the flight line.

RANGE CONTROL--Used in supporting the Range Control functions on a DoD Range² (e.g., Range scheduling).

RANGE OPERATIONS--Used in supporting general operations on a DoD Test Range or Military Training.²

RANGER UNITS--Used in supporting those units that plan and conduct special military operations and have the ability to support conventional military operations.³

RDMS (Range Data Management Subsystem)--Used to support the RDMS currently being used at the National Training Center (NTC).

RDTE SUPPORT--Used for communications support of research, development, test, and evaluation (RDT&E) programs and projects. (These frequency assignments do not have an experimental station class.)

RED HORSE--Used in support of air force tactical construction operations.

REFUELING--Used in supporting voice communications in support of air-air refueling operations.¹

REMOTE BARRIER CONTROL SYSTEMS--Used to control aircraft barrier systems.

REMOTE CONTROL CRANE--Used to control remotely controlled cranes such as in a shipyard, harbor or other major industrial facilities.

RESOURCES CONSERVATION--Used to support resource conservation research operations.

RESUPPLY--Used in support of re-supply operations.

RUNWAY ICE DETECTION SYSTEMS--Used to monitor runway ice detection systems.

RUNWAY LIGHTING CONTROL--Used to control remotely controlled runway lighting.

SAFETY--Used in support of Public works safety net.

SATELLITE COMMUNICATIONS--Used for voice and/or data transmissions over a non-specific satellite system

SAWDS (Satellite Automated WX Dist Sys)--Network to disseminate weather information to DoD facilities.

SCAMP (Single Channel Anti-Jam Manportable Terminal)--Used to support voice and data links for battle command and control communications.⁵

SCOPE SHIELD--Tactical handheld radios.

SEA OPERATIONS--Used in supporting those functions which originate from on board ship and/or directly support the launching of, actual conduct of, and returning of forces carrying out sea-based operations; operations in a maritime and littoral environment which contribute to gaining and maintaining freedom of action.

SEABEES--Used in support of SEABEES construction activities.²

SEARCH AND RESCUE--Used in supporting Search and Rescue (SAR) operational use of aircraft, surface craft, submarines, specialized rescue teams and equipment to search for and rescue personnel in distress on land or at sea.

SECURITY FORCE--Used in providing installation physical security operations.²

SEISMIC--Used to transmit measurements of stress, strain, or movements of the earth's crust.

SENTINEL-- (AN/MPQ-64 Surveillance Radar)--Used for air surveillance and target acquisition/tracking sensor for Short Range Air Defense (SHORAD) weapons systems.⁵

SGLS (Space Ground Link Subsystem) (Telemetry)--Used in conjunction with the Automated Remote Tracking System (ARTS).

SHIP/AIR OPERATIONS--Used in supporting airborne units assigned to US Naval ships.

SHIP/SHIP--Used in supporting ship-to-ship communications.

SHIP/ShORE OPERATIONS--Used in supporting ship-to-shore communications.

SHIPYARD--Used in supporting shipyard operations, except remote controlled cranes.

SHORE PATROL--Used by shore patrol activities.

SHUTTLE--Used in direct support of Space Shuttle operations.²

SIMULATOR--Used to support simulator activities.

SINCGARS-- (Single Channel Ground and Airborne Radio System)--Used to support combat arms command and control operations.⁵

SINCGARS-ASIP (Single Channel Ground and Airborne Radio System-Advanced System Improvement Plan)--Used to support combat arms command and control operations.⁵

SNOW REMOVAL--Used to support snow removal activities.²

SOF (Supervisor of Flying)--Used by the SOF to assist pilots.

SONOBOUY--Used for floating electronic sensors designed to provide various data for Navy antisubmarine warfare (ASW).

SPACE OPERATIONS--Used in supporting those functions that directly support operational space missions including satellite control and shuttle missions.²

SPECIAL COURIER--Used by personnel engaged in transporting valuable, sensitive, hazardous, or classified material.

SPECIAL FORCES--Used for specially trained, equipped, and organized forces against strategic or tactical targets in pursuit of national military, political, economic, or psychological objectives. These operations may be conducted during peace or hostilities. They may support conventional operations, or be prosecuted independently when use of conventional forces is inappropriate or infeasible.

SPECIAL OPERATIONS--Used in directly supporting Special Operations; those operations conducted by specially trained, equipped, and organized DoD forces (e.g., SOF) against strategic or tactical targets during peacetime or during hostilities.

SPECIAL PROJECTS--Used in support of communications electronics systems that are generally one-of-a-kind systems (e.g., Special Forces, intelligence, RF propagation systems, ground and avionics communications-electronics weapons systems, etc).

SPECIAL SECURITY OPERATIONS--Used in direct support of special security operations.

SPEED MEASUREMENT SYSTEMS--Used by law enforcement activities to measure the speed of vehicles.

SPITFIRE (SPITFIRE Manpack UHF SATCOM DAMA Terminal)--Used to support digital voice communications.

SQUADRON/WING COMMON--A common frequency used for communication within a squadron or wing; (AF) a unit composed normally of one primary mission group and the necessary supporting organizations; (Navy) the basic organizational and administrative unit for naval-, land-, and tender-based aviation; (Marines) a balanced task organization of aircraft groups/squadrons together with appropriate command, air control, administrative, service, and maintenance units.

STRIKER II (Advanced Fire Support/Scout/Surveillance System)--Used to support long range, reconnaissance, surveillance and fire support systems.⁶

SUPPLY AND LOGISTICS--Used to support general Supply and Logistics operations.

SURFACE NAVAIDS--Used to furnish navigational assistance to ships.

SURVEILLANCE SYSTEMS--Used to support base security surveillance operations.

SURVEILLANCE/RECONNAISSANCE--Used in supporting those strategic and tactical sensors and systems which provide warning of air breathing, ballistic missile, space-based, or tactical ground-based attack or to relay voice and/or data on the activities and resources of a potential or real enemy or the characteristics of a particular area obtained through visual observations or other detection methods.¹

SURVEY--Used on an intermittent basis by field survey teams involved in measurement activities (e.g. geodetic surveys, radiation hazard monitoring, pre-construction site surveys, etc).

SUSTAINING OPERATIONS--Used in supporting those functions normally performed in conjunction with the continued operation of a Army Post, Navy/Marine Corps Base, Air Force Base, or ships.²

TACAN (Tactical Air Navigation)--Used by TACAN systems.

TACCS (Tactical Army Combat Service Support Computer System)--Used in support of the TACCS.

TACJAM (Tactical Communications Jamming System)--Used to support jamming operations.⁶

TACTS (Tactical Trunk Signaling)--Used to support trunking systems.⁶

TADIL-A--Used in support of the operation of Link 11 Naval Tactical Data Systems (ship to ship and ship to air) operations. Also used by the USAF for air to ground operations.

TADIL-C--High Frequencies (HF) Used in support of the operation of Link 11 Naval Tactical Data Systems (ship to ship and ship to air) operations.

TARGET ACQUISITION--Used within a system that identifies valid targets.

TARGET SCORING--Used to support target scoring of laser equipment.⁴

TARGET--Used to support target scoring and precision tracking radar etc.⁴

TAXI--Used by base/installation taxi systems.²

TCAS (Traffic Collision Avoidance System)--Used by aircraft equipped with the TCAS equipment.²

TCRS (Target Control System)--Used to support target control functions and exercises at NTC.

TEAMMATE--Used to support collection and direction finding systems.⁵

TECHNICAL ESCORT UNIT--Used to support a technical escort unit which is a deployable explosive and chemical/biological response team that identifies, escorts, decontaminates, disposes, and mitigates explosive chemical and biological devices.

TELECOMMAND--Used to remotely control the operations of an unmanned vehicle (land, sea, air, or space), or to activate and deactivate instruments or devices carried by the vehicle (e.g. missile destruct, guidance of remotely piloted vehicles (RPVs), control of overhead cranes, etc).

TELEMETRY--Used in supporting the transmission of telemetry data on a DoD Range.²

TEST AND MEASUREMENT--Used in supporting the test and measurement functions on a DoD Range.²

TEST RANGE TIMING--Used in supporting the transmission of timing signals on a DoD Range.²

TEST RANGE--Used in support of operations that are unique to a government test range (e.g. range control, range safety, range timing, etc).

TETHERED AREOSTAT RADAR--Used in supporting the Tethered Aerostat Radars and interface system.²

THUNDERBIRDS--Used by the USAF THUNDERBIRDS demonstration team.

TMGS (Transportable mobile ground subsystems)--Used in support of telecommand operations.

TOSS (TV Ordnance Scoring System)--Used in support of telecommand operations in scoring target accuracy on military ranges.

TOWER— Controls aircraft within assigned airspace and aircraft/vehicles on ground at airfields.

TRACKWOLF--Used to support ground based HF skywave communications intercept and direction finding systems.⁵

TRAILBLAZER (Ground Based Communications Intelligence System)--Used by the Army to gather Intelligence.

TRAINING--Used to train personnel in the accomplishment of a specific task or set of tasks.

TRANSPORTATION--Used to coordinate the routine movement of material and/or personnel from one point to another (e.g. messenger service, supply expeditor, taxi dispatch, etc).

TRAVELERS INFORMATION SYSTEM--Used to provide travelers advisories.²

TROJAN SPIRIT--Used to support the Transportable Trojan Spirit II satellite communications terminal.⁵

TRUNKING--Radiotelephony using standard land mobile trunking principles.

TSU-- Technical escort unit is a deployable explosive and chemical/biological response team that identifies, escorts, decontaminates, disposes, and mitigates explosive chemical and biological devices.

UAV (Unmanned Aerial Vehicle)--Used in supporting the testing and/or operations of pilotless aircraft ²

UNLICENSED DEVICE--Used by the government for use by low power devices normally operated without a license under the provisions of Part 15 of the FCC Regulations.

UTILITIES--Used for the management, control, and/or distribution of utilities (e.g. electric power, water, telephone service, oil and gas, etc).

VOR (Very High Frequency Omnidirectional Range)--Used for Very High Frequency (VHF) Omnidirectional Range (VOR) operations.²

VORTAC (VHF Omni-range TACAN)--Used for VORTAC operations.²

WARNING SYSTEM—A signal or siren that warns of imminent danger (e.g., bomb alert, chemical, tornadoes, etc.)

WEAPONS STORAGE PROTECTION--Used to support weapons storage facilities.⁶

WEATHER RADAR--Radar frequencies used by aircraft or ground based sites for weather purposes.

WEATHER--Used for the transmission of meteorological information (e.g. wind speed, temperature, barometric pressure, forecasts, etc).

WHCA (White House Communications Agency)--Used in supporting WHCA operations.

WILDLIFE PRESERVATION--Used for game wardens, endangered species/wildlife preservation and tracking the movements of wild animals.

WIND PROFILER--Used for sensing wind shear in the vicinity of airports.

WIN-T (Warfighter Information Network-Tactical)--Used to support the Army's tactical Intranet consisting of switching/routing/transport that provides voice, data and video services.⁶

WIRELESS LOCAL AREA NETWORK--Used to support local area network frequency bands.⁶

WIRELESS MIKE--A transmitting device used to provide the audio input to a speaker system. (Note: Although wireless mikes may be used in direct support of functions shown elsewhere on this list, such as RDTE SUPPORT or TRAINING, all assignments for these devices shall show WIRELESS MIKE as the function name.)

WOLVERINE (Assault Bridge)--Used to support command and control of bridge operations.⁶

Notes: --

(none) Taken directly from Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*--

1. Adapted from existing definition(s) contained in Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*--
2. Definition derived from various DoD sources--
3. Definition extracted or derived from HQ Department of the Army, FM 100-5, *Operations*--
4. Definition extracted or derived from HQ Department of the Army, AR 310-25, *Dictionary of United States Army Terms*.
5. Definition extracted or derived from Command, Control, Communications, Computer, Intelligence & Electronic Warfare and Sensors and Information Management (C4IEWS & IM).
6. Definition extracted or derived from Secretary of the Army Research, Development, & Acquisition via the Internet

APPENDIX B - ACRONYMS

The following acronyms are used throughout this document. Acronyms extracted from the NTIA Manual and placed in Annexes A-G of Appendix A for reference use have not been included here.

AAG	Aeronautical Advisory Group
AMSL	Above Mean Sea Level
ACTF	Agenda Action File
AFC	Area Frequency Coordinator
ASCII	American Standard Communications Information Interface
AUTODIN	Automatic Digital Network
BR	Radiocommunications Bureau (formerly IFRB)
CCF	Central Computer Facility
C-E	Communications-electronics
CENTCOM	Central Command
COCOM	“Combatant Commander” or “Combatant Commands” depending upon context
CONUS	Continental United States
COMSEC	Communications Security
DCF	Distributed Computer Facility
DCS	Defense Communications Systems
DISA	Defense Information Systems Agency
DMS	Defense Message System
DoD	Department of Defense
EC	Earth Coverage
ECCM	Electronic Counter Countermeasures
ECM	Electronic Counter Measures
EMC	Electromagnetic Compatibility
ERP	Effective Radiated Power
EUCOM	European Command
EW	Electronic Warfare
FAA	Federal Aviation Administration
FAS	Frequency Assignment Subcommittee
FCC	Federal Communications Commission
FMO	Frequency Management Office
FMSC	Frequency Management Sub-Committee (formerly ARFA)
FP	Frequency Panel
FRRS	Frequency Record Resource System
GAFC	Gulf Area Frequency Coordinator
GE	Germany
GMF	Government Master File
HF	High Frequency
IAW	In Accordance With
IRAC	Interdepartment Radio Advisory Committee
ITU	International Telecommunication Union
JCS	Joint Chiefs of Staff
JFCOM	Joint Forces Command
JFMO	Joint Frequency Management Office
JFP	Joint Frequency Panel
JNTSVC	Joint Service

JSC	Joint Spectrum Center
Keymat	Keying Materiel
LANTCOM	Atlantic Command
MAG	Military Advisory Group
MAJCOM	Major Commands
MCEB	Military Communications – Electronics Board
MILDEP	Military Department
MRFL	Master Radio Frequency List
NAVAIDS	Navigation Aid System
NATO	North Atlantic Treaty Organization
NSA	National Security Agency
NTIA	National Telecommunications and Information Administration
OUS&P	Outside United States & Possessions
PACOM	Pacific Command
PC	Personal Computer
PD	Pulse Duration
PLAD	Plain Language Address
PRR	Pulse Repetition Rate
PPS	Pulses Per Second
PO	Periodic Output
RDTE	Research, Development, Test & Evaluation
SCIF	Sensitive Compartmented Information Facility
SFAF	Standard Frequency Action Format
SIPRNET	SECRET Internet Protocol Router Network
SOUTHCOM	Southern Command
SOPs	Standard Operating Procedures
SOPWG	Spectrum Operations Permanent Working Group
SCG	Security Classification Guide
US	United States
US&P	United States and Possessions
USAF	United States Air Force
JFCOM	Joint Forces Command
UIC	Unit Identification Code
USMC	United States Marine Corps
YYYYMMDD	the four digit year, two digit month and two digit day of the month

APPENDIX C - DISTRIBUTION

The following list of addressees will receive a paper copy of this document and any subsequent changes. Please contact doyend@jsc.mil if any organization addressee that has access to an automated copy of this document and can be removed from this list. An automated copy of this document is on most JSC database CD ROM products. This document is also available from the JSC Web site at <http://www.jsc.mil/Documents/mcebdocs.asp>.

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APPENDIX D – SUMMARY OF MAJOR CHANGES

1. This change supercedes MCEB PUB 7, Frequency Resource record System (FRRS) DoD Standard Frequency Action Format (SFAF) dated 1 October 1998 amended with change 1 dated 1 December 1999, with change 2 dated 30 Nov 2000, change 3 dated 30 Nov 2001 and change 4 dated 31 December 2002. The following significant changes were made in the main part of the document. Added a new paragraph 6 to reflect the required data fields supporting various analysis capabilities.

- a. Updated Table A1, Summary of Data Item Specifications
- b. Changed “CINC” to “COCOM” related data throughout the document
- c. Revised data item 007.
- d. Changed data item 103 to 10 occurrences.
- e. Changed the title of data item 144 to Approval Authority Indicator.
- f. Changed the title of data item 707 to PACOM Complement/FMSC Function Number.
- g. Changed data item 506 to 30 occurrences.
- h. Change data item 710 from 12 to 35 characters.
- i. Deleted data item 922.
- j. Changed data item 963 from 16 to 22 characters.

2. Minor changes were made in other parts of the document to support the above changes.

3. The following list of SFAF items in Appendix A have been significantly changed in this document.

SFAF ITEM	CHANGE
007	Revised
513	Revised the text to limit new entries until approved by the SOPWG.
963	Changed the field length from 16 to 22 characters and updated the example.

4. Other changes include:

- a. Revised Annex A-D, Manufacturer Codes
- b. Revised Annex A-F, IRAC Approved Record Notes
- c. Revised Annex A-I, List of DoD Agency Specific Function Identifiers
- d. Replace Appendix D – Summary of Major Changes
